State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Northern District

SUMMARY OF OPERATIONS

FOR

WATERMASTER SERVICE IN NORTHERN CALIFORNIA
1994 Season

JUNE 1995

PETE WILSON
Governor
State of California

DOUGLAS P. WHEELER
Secretary for Resources
The Resources Agency

DAVID N. KENNEDY
Director
Department of Water Resources

FOREWORD

This report describes the watermaster service provided by the Department of Water Resources to areas in Northern California during the 1994 irrigation season. Authority for its preparation and publication is stated in the California Water Code, Division 2, Part 4, Chapter 7.

This report presents information about 1994 watermaster service in two sections. The first section gives general introductory information about water rights, water supply, service areas, and watermaster duties. The second section describes the 15 active service areas. Thirteen of these service areas are served by Northern District watermasters. The other two service areas, Indian Creek and Middle Fork Feather River, are in the vicinity of DWR's Beckwourth Field Office and are served by watermasters of the Division of Operations and Maintenance, Oroville Field Division. Each of these service area descriptions gives detailed information on the area, the basis of watermaster service, sources of water supply, methods of distribution, 1994 water distribution, and personnel used.

Linton A. Brown

Linton A. Brown, Chief
Northern District

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INTRODUCTION

Purpose and Benefits

The main purpose of watermaster service is to distribute water according to established water rights. This is done by apportioning to the rightful users the available supplies in streams that have had water right determinations.

Distribution of water in watermaster service areas is the lawful duty of the Department of Water Resources as directed in Part 4 of Division 2 of the California Water Code. Under watermaster service, water right holders are assured that their rights are protected without their having to take legal action against other users.

A major benefit of watermaster service to water users and the State is that court litigation and violent conflict, which in the past happened often, are now rare. Also, available supplies of water are better used, as waste is reduced through careful management.

Because both the water right holders and the State receive benefits from watermaster service, the costs of performing the service are shared. The State General Fund pays one-half of the cost of operating each service area and the water right holders in the service area pay the other half. Individual users' shares are determined in accordance with Article 3 of Chapter 7 of the above-mentioned Part 4 of Division 2 of the Water Code. Although this work is done as efficiently as possible, considerable public funds are needed to: (1) maintain skilled representatives in the field during the dry months of the growing season; and (2) maintain administrative support at Department headquarters. Nevertheless, most clients find the benefits of fair, reliable, and comparatively worry-free distribution of water to be far superior to doing without State watermaster service.

Determination of Water Rights

Many of the streams under State watermaster service have had their water rights defined by the courts under one of three adjudication procedures. These judgments establish each holder's rights in terms of rate of diversion, season of use, point of diversion, and place of use. They also establish priorities whereby each holder's rights are ranked according to the rights of all other decreed holders. Under this system, all rights of any one priority must be fully satisfied before water can be diverted to holders of lower priority rights. The determinations of the courts are commonly called decrees.

Water rights decisions necessary for establishing watermaster service areas are accomplished by the following methods: (1) a statutory adjudication which defines all water rights on the stream; (2) a court adjudication which results when two or more parties have their water rights defined; and (3) a court reference whereby the State Water Resources Control Board makes an investigation and reports to the court regarding water rights of the parties involved.

Statutory Adjudication

The California Water Code (Sections 2500-2900) gives a procedure whereby water users of any stream may petition SWRCB, Division of Water Rights, to make a legal determination of all water rights on that stream. If SWRCB finds that such a determination is in the best public interest, it proceeds with a legally binding decision. This results in a court decree that defines all water rights on the stream.

Figure 1 contains a location map of the service areas, the number of decreed holders, and the amounts of water rights for each area. Table 1 lists the water right Superior Court decrees and their type.

Court Adjudication

A less extensive method of defining water rights is the "court adjudication" procedure. This type of adjudication results when two or more parties involved in a water rights dispute seek a solution to their problem under civil law. A decision handed down in such a civil action determines only the water rights of the parties involved in the action and therefore does not necessarily define all water rights on the stream. As a result, serious conflicts sometimes arise between decreed water right holders and persons claiming longer-standing riparian or appropriative rights that were not specified in the decree.

Court Reference

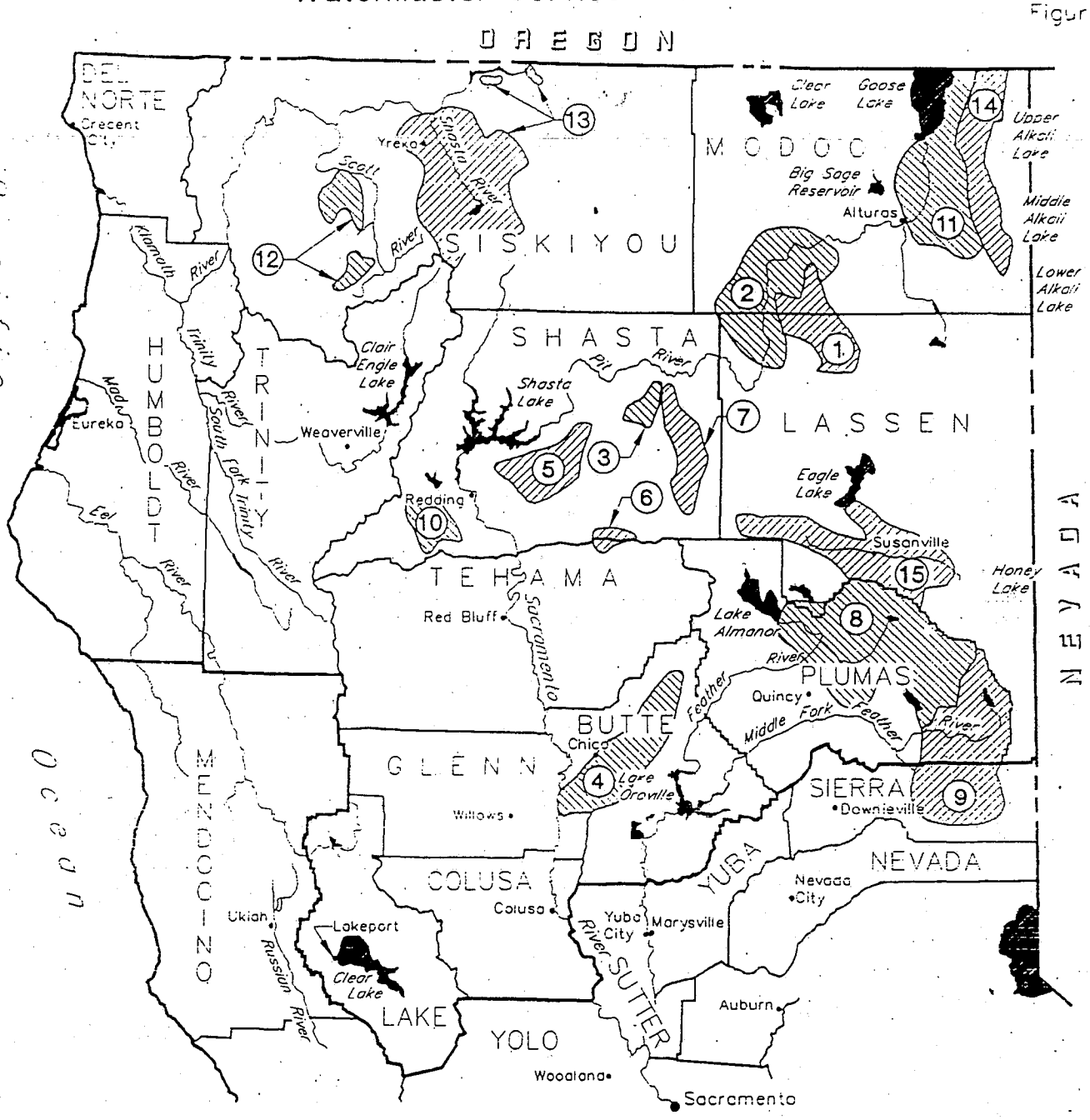
The "court reference" type of adjudication arises when a civil action, as discussed, is referred to SWRCB for a determination under authority contained in Sections 2000-2076 of the Water Code. SWRCB's report becomes the basis for the court's decision. As in court adjudications, a court referee determines only the water rights of the parties involved in the action.

Non-Judicial Decisions

A permit or "license to appropriate" can be issued by SWRCB, or agreement can be reached by mutual consent of the water users involved.

Watermaster Service Areas

Figure 1



1994 Decreed Water Rights

Service Area	Number of Decreed Water Users	Total Decreed Water Rights ft3/s
1. Ash Creek	47	123.650
2. Big Valley	50	206.780
3. Burney Creek	11	33.090
4. Butte Creek	46	431.840
5. Cow Creek	99	56.562
6. Digger Creek	111	23.401
7. Hat Creek	87	159.710 1/
8. Indian Creek	49	96.715
9. M.F. Feather River	116	376.739
10. N.F. Cottonwood Creek	12	29.050
11. N.F. Pit River	122	248.515 2/
12. Scott River	102	129.560
13. Shasta River	208	623.857 3/
14. Surprise Valley	182	368.930
15. Susan River	228	354.099

1/ Average of Upper and Lower Rotation. 1470 /3262.498

2/ Includes Pine Creek near Alturas.

3/ Includes Willow Creek near Ager which is based on a percentage of flow.

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TABLE 1

WATERMASTER SERVICE AREAS, STREAM SYSTEMS

AND

SUPERIOR COURT DECREES REGULATING WATER DISTRIBUTION

Watermaster Service Area	Name of Stream System[a]	County	Decree Number	Decree Date	Decree Type*	Date Watermaster Service Area Created	Remarks
Ash Creek	Ash Creek	Modoc ** and Lassen	3670	10-27-47	CR	4-03-59	Included as part of Big Valley service area 1949 through 1958.
Big Valley	Pit River	Modoc ** and Lassen	6395	2-17-59	S	11-13-34	Service provided in accordance with recorded agreement in 1934. Service area operated under recorded agreement 1935 through 1958, and under decree since 1959 Service discontinued on December 31, 1961, and reactivated May 1, 1990.
Burney Creek	Burney Creek	Shasta	5111	1-30-26	CR	9-11-29	
Butte Creek	Butte Creek	Butte	18917	11-06-42	S	1-07-43	
Cow Creek[b]	North Cow Creek	Shasta	5804	4-29-32	CR	10-17-32	
	Oak Run Creek	Shasta	5701	7-22-32	CR	10-17-32	
	Clover Creek	Shasta	6904	10-04-37	CR	1-21-38	
Digger Creek	Digger Creek	Shasta and Tehama **	2213	8-12-99	C	6-11-64	
			3214	5-27-13	C		
			3327	10-16-17	C		
			4570	2-24-27	C		
Hat Creek	Hat Creek	Shasta	5724	5-14-24	CR	9-11-29	Service provided in accordance with decree since 1924.
			7858	5-07-35	CR		
Indian Creek	Indian Creek	Plumas	4185	12-19-50	S	2-19-51	
Middle Fork Feather River	Middle Fork Feather River	Plumas ** and Sierra	3095	1-19-40	S	3-29-40	
North Fork Cottonwood Cr.	North Fork Cottonwood Cr.	Shasta	5479	6-09-20	CR	9-11-29	Service provided intermittently in the accordance with the decree since 1924.
North Fork Pit River	North Fork Pit River and all tributaries except Franklin Creek	Modoc	4074	12-14-39	S	12-18-39	All stream systems consolidated into North Fork Pit River service area 12-13-40
	New Pine Creek	Modoc	2821	6-14-32	CR	6-22-32	
	Davis Creek	Modoc	2787	6-30-32	CR	7-13-32	
	Franklin Creek	Modoc	3118	9-08-33	CR	9-14-33	
	Cottonwood Creek	Modoc	2344	5-03-40	CR	12-13-40	
	Pine Creek near Alturas	Modoc	Agreement	11-22-33		1-12-35	Pine Creek was transferred from Surprise Valley to North Fork Pit River watermaster service area in 1994.
Scott River	French Creek	Siskiyou	14475	7-01-58	CR	11-19-68	French, Shackleford, and Wildcat Creek were combined in 1980 to form the Scott River service area. Sniktaw Creek was added on April 1, 1981, and Oro Fino Creek in July 1, 1984.
	Shackleford Creek	Siskiyou	13775	4-10-50	S	11-06-50	
	Wildcat Creek	Siskiyou	30662	1-16-80	S	5-01-80	
	Sniktaw Creek	Siskiyou	30662	1-16-80	S	4-01-81	
	Oro Fino Creek	Siskiyou	30562	1-16-80	S	7-01-84	
Shasta River	Shasta River	Siskiyou	7035	12-29-32	S	3-01-33	
	Willow Creek	Siskiyou	24462	4-28-72	C	6-22-72	
	Cold Creek	Siskiyou	29348	7-05-78	S	4-01-81	
Surprise Valley	Cedar Creek	Modoc	1206	5-22-01	C	6-19-26	All adjudicated stream systems in Surprise Valley were consolidated into the Surprise Valley service area on 1-10-39. Bidwell Creek was added on March 16, 1960. Service started on Cedar Creek in 1926 in accordance with the decree. Service was provided on Soldier and Owl Creeks in 1929 in accordance with the decrees by order of the court. Cottonwood Creek was added on 7-1-77.
			2343	2-15-23	C		
	Soldier Creek	Modoc	2405	11-28-28	CR	9-11-29	
	Owl Creek	Modoc	2410	4-29-29	CR	9-11-29	
	Emerson Creek	Modoc	2840	3-25-30	CR	4-01-29	
	Mill Creek	Modoc	3024	12-19-31	CR	12-30-31	
	Deep Creek	Modoc	3101	1-25-34	CR	12-29-34	
	Pine Creek near Cedarville	Modoc	3381	12-07-36	CR	1-13-37	
	Rader Creek	Modoc	3626	6-04-37	CR	6-12-37	
	Eagle Creek	Modoc	2304	4-05-26	C	1-10-39	
			3284	11-05-37	CR		
	Cottonwood Creek	Modoc	6903	12-01-84	C	7-01-77	
	Bidwell Creek	Modoc	6420	1-13-60	S	3-16-60	
Susan River	Susan River	Lassen	4573	4-18-40	CR	11-10-41	
	Baxter Creek	Lassen	8174	12-15-55	S	2-16-56	
	Parker Creek	Lassen	8175	12-15-55	S	2-16-56	

* Explanation of type of decree:

C - Court adjudication (court makes determination from evidence submitted—no report of referee)
CR - Court reference (referred to State Water Resources Control Board for investigation and report)
S - Statutory adjudication (State Water Resources Control Board is petitioned by water users to make a determination of all water rights on a stream system)

** Decree entered by the Superior Court of this county.

[a] Major tributaries only; a complete listing is given in "Watermaster Service Areas and Stream Systems", page 6.

[b] Mainstem Cow Creek not in service area.

Watermaster Service Areas

Watermaster service is provided in areas where the rights have been defined by the superior court of the county, or by agreement, and where an unbiased qualified person is needed to properly apportion the available water according to the established rights. The Director of DWR creates watermaster service areas where these conditions exist, following either a request by the users or an order by the Superior Court.

The first watermaster service areas were created in September 1929. Before then, some watermaster service was provided in accordance with the Water Commission Act of 1913. About 50 streams in Northern California are now under State watermaster service. The newest service areas were created in 1980.

The counties and principal water sources of the various service areas in Northern California are listed in Table 2.

Of these 15 areas, 13 are in the Department's Northern District and two are in the Central District, served by watermasters assigned to the Division of Operations and Maintenance, Oroville Field Division.

Description of Region

The service areas are mainly in the mountainous northeastern part of the State where the growing season varies between about 100 and 140 days. Meadow hay and alfalfa are the principal crops under irrigation, although much land is used exclusively for pasturing livestock. Much irrigation is still done by gravity systems, with water users diverting directly from the streams at one or more diversion points. However, pumped diversions and sprinkler irrigation systems are becoming popular in some areas.

Watermaster Responsibilities

To assure the proper distribution of water within the service area, each watermaster must ascertain the amount of water available and distribute it both by amount and priority according to established water rights.

Authority

To accomplish this, the watermaster gets authority both from the California Water Code and from provisions of pertinent court decrees or voluntary agreements to physically regulate the streams in the service area. The watermaster is further authorized to supervise the design, construction, operation, and maintenance of diversion dams, headgates, and measuring devices.

Each watermaster supervises water distribution at around 100 to 200 diversions in one or more service areas. The need for frequently checking and regulating these diversion points increases substantially in years of short water supply.

TABLE 2

WATERMASTER SERVICE AREAS AND STREAM SYSTEMS

Service Area	County	Principal Water Sources: MAJOR STREAM and Tributaries[a]	Principal Water Sources: Reservoirs and Nontributary Streams
Ash Creek	Lassen, Modoc	ASH CREEK Butte, Rush, and Willow Creeks	
Big Valley	Modoc, Lassen	PIT RIVER Ash Creek	Roberts Reservoir
Burney Creek	Shasta	BURNEY CREEK	
Butte Creek	Butte	BUTTE CREEK	West Branch Feather River
Cow Creek	Shasta	COW CREEK[b] North Cow, Clover, Oak Run, and Cedar Creeks	
Digger Creek	Shasta, Tehama	DIGGER CREEK	
Hat Creek	Shasta	HAT CREEK	
Indian Creek	Plumas	INDIAN CREEK Lights Creek, Wolf Creek	
Middle Fork Feather River	Plumas, Sierra	MIDDLE FORK FEATHER RIVER Little Last Chance, Smithneck, Webber and Fletcher Creeks; Spring Channels; Westside Canal	Little Truckee River
North Fork Cottonwood Creek	Shasta	NORTH FORK COTTONWOOD CREEK	Rainbow Lake
North Fork Pit River	Modoc	NORTH FORK PIT RIVER Parker Creek, Shields Creek	Cottonwood, Davis, New Pine Creek, and Pine Creek near Alturas
Scott River	Siskiyou	FRENCH CREEK Shackleford, Mill, Miners, Wildcat, Oro Fino, Sniktaw Creeks	Cliff and Campbell Lakes
Shasta River	Siskiyou	SHASTA RIVER Little Shasta River Sacramento River	Dwinnell Reservoir (Lake Shastina), Cold Creek, Willow Creek, and North Fork
Surprise Valley	Modoc	NONE (All creeks listed at right are unconnected)	Bidwell, Mill, Soldier, Pine near Cedarville, Cedar, Deep, Cottonwood, Owl, Rader, Eagle, and Emerson
Susan River	Lassen	SUSAN RIVER Willow Creek	Lake Leavitt, Hog Flat, McCoy Flat Reservoirs; Baxter and Parker Creeks

[a] Major tributaries only.
[b] Mainstem Cow Creek not in service area.

Control Devices

Permanent measurement and control devices, which the State requires (Water Code Sections 4100-4104) at each property owner's main point of diversion, are constructed by the water users under supervision of the watermaster. Installation of accurate, easily set, and lockable structures is a continuing objective of watermaster service, since once they are built, conflicts among water users usually stop. Also, the watermaster's ability to check and set each diversion regularly is greatly helped by engineered and properly built structures.

Interpretation of Decrees

The watermaster is often called upon to make on-the-spot interpretations of various court decrees, agreements, etc. Since most of these documents were written more than 30 years ago, many situations have developed that were not initially considered. Therefore, watermasters must use sound, careful, and practical judgment in attempting to reach workable solutions to water disputes. To accomplish this, they must possess a good understanding of California water rights law.

Water Supply

Water supply in the watermaster service areas comes mainly from unregulated runoff of small streams. Peak runoff--snowmelt in most cases--occurs in the spring, with relatively small streamflow occurring in the summer and early fall. Additional supplies from storage reservoirs and ground water pumping are used in some areas to supplement natural streamflow, but State watermasters do not supervise the use of ground water in this part of the State.

In some service areas, the water supply must be predicted in advance to determine the date watermastering will begin and, to some extent, the work force needed. DWR's Bulletin 120 series, *"Water Conditions in California,"* is used to assist in these predictions.

Precipitation

The streamflow available for distribution is affected by total precipitation, amount of snowpack, air temperature, and the amount of rainfall received during the irrigation season. The latter is particularly important in the upper Pit River-Surprise Valley areas, where about 25 to 30 percent of the annual precipitation occurs normally in April, May, and June. Spring storms, which are normally accompanied by relatively cool temperatures, materially affect both the water supply and the demand. Temperatures in the spring affect the demand for water and the manner in which snowmelt runoff occurs. A hot, dry spring depletes the water supply very early, even in years of normal snowpack. A cold, wet spring can extend the supply well into the irrigation season, but cold temperatures retard the growth of crops and are not necessarily desirable.

Table 3 reports the quantity of precipitation at selected stations in the service areas during the 1993-94 water year. The seasonal precipitation gives an indication of the related water supply available for distribution, and provides a basis for comparing the current year's supply with a long-term average.

Table 4 shows the snowpack on April 1, 1994 on all snow courses, and the snowpack on May 1, 1994 on selected courses. This information comes from DWR's basic data files.

Streamflow

The general water supply available for diversion within each watermaster area is determined from stream gaging stations placed at key locations in the main stream channels. Several major stations are installed and maintained by DWR and the U.S. Geological Survey as part of federal and State programs for collection of year-round streamflow records. In addition, several stream gaging stations are installed and operated by the watermasters during the irrigation season to provide supplemental information. Also, water stage recorders are often installed by watermasters in selected diversion ditches to further assist them in proper distribution of the various water right allotments.

Table 5 presents runoff data at selected stream gaging stations in or near the service areas.

TABLE 3

PRECIPITATION AT SELECTED STATIONS - 1993-94 SEASON
(Units in Inches)

Current Season
Long-term Average

Station	County	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Total	Percent of Normal
Lookout 3WSW	Lassen	1.49	0.96	2.78	0.78	2.97	1.70	1.35	3.10	1.16	0.02	0.00	0.28	16.59	79
		1.59	2.70	2.72	2.77	2.77	2.67	1.52	1.58	1.08	0.27	0.55	0.78	21.00	
Susanville 1WNW	Lassen	1.30	1.00	1.10	1.32	2.10	1.20	0.10	1.21	0.14	0	0	0.46	9.93	61
		1.22	1.80	2.59	2.99	2.38	1.90	0.74	0.77	0.69	0.34	0.32	0.45	16.19	
Alturas[1/] R.S.	Modoc	1.47	1.13	0.94	0.26	1.28	2.41	0.78	1.72	0.66	0	0	0	10.65	89
		0.85	1.55	1.37	1.39	1.19	1.27	1.06	1.15	0.90	0.23	0.48	0.57	12.01	
Cedarville	Modoc	0.97	0.67	1.27	0.35	1.32	1.08	0.70	1.13	0.53	0.22	0	0.36	8.60	67
		1.03	1.81	1.58	1.65	1.35	1.40	1.07	1.00	0.67	0.29	0.44	0.57	12.86	
Jess Valley	Modoc	1.75	1.26	1.57	0.99	2.18	1.76	1.61	3.86	0.72	0.12	0	0.38	16.20	89
		1.36	2.15	2.00	1.83	1.52	1.93	1.89	2.03	1.40	0.42	0.73	0.91	18.17	
Greenville R.S.	Plumas	2.68	2.85	5.06	2.51	5.74	1.14	1.17	2.30	0.21	0	0	0.43	24.09	57
		2.65	5.91	7.00	8.47	6.25	5.62	2.50	1.59	0.85	0.23	0.47	0.92	42.46	
Vinton 5SW	Plumas	1.38	0.46	1.44	0.04	1.35	1.23	0.27	1.05	0.03	0.30	0	0.76	8.31	60
		1.06	1.96	1.77	2.12	1.76	1.50	0.74	0.92	0.65	0.32	0.45	0.59	13.84	
Sierraville R.S.	Sierra	1.33	2.23	2.84	0.34	3.74	1.57	0.39	0.87	0	0	0	0.71	14.02	51
		2.00	4.35	4.12	4.66	3.95	3.31	1.43	1.35	0.63	0.28	0.44	0.73	27.25	
Hat Creek P.H. #1	Shasta	3.29	1.22	2.21	0.85	3.21	1.39	0.77	2.91	0.56	0	0	0.89	17.30	89
		1.50	2.48	2.86	2.97	2.46	2.68	1.30	1.25	0.80	0.14	0.43	0.66	19.53	
Redding, WSO	Shasta	2.92	1.52	3.16	3.34	6.41	1.92	1.86	1.41	0.03	0	0	0.20	22.77	75
		2.24	5.21	5.51	6.06	4.45	4.38	2.08	1.27	0.56	0.17	0.46	0.91	30.30	
Fort Jones R.S.	Sisk.	0.52	0.66	3.53	1.72E	1.53	0.31	0.48	1.23	0.05	0	0	0.08	10.11	46
		1.40	3.41	4.49	3.74	2.58	2.15	1.11	0.72	0.64	0.33	0.61	0.81	21.99	
Happy Camp R.S.	Sisk.	0.98	2.63	9.34	6.03	4.00	0.87	1.86	1.49	0.30	0	0	1.34	28.84	55
		3.57	8.79	10.03	9.43	7.39	6.81	2.63	1.38	0.55	0.22	0.65	1.20	52.65	
Yreka	Sisk.	0.68	0.41	2.63	1.12	1.28	0.15	1.05	1.80	0	0.09	0.03	0.33	9.57	50
		1.24	2.87	3.74	2.98	2.16	1.88	1.00	0.81	0.85	0.46	0.60	0.59	19.18	

1/ Alturas R.S. data ends October 31, 1993; new Alturas observer and gauge location beginning November 1, 1993.

E - Estimated

NOTE: Current season above line; long-term averages below line.

TABLE 4

SNOWPACK AS OF APRIL 1 AND MAY 1, 1994, AT REPRESENTATIVE SNOW COURSES

Watermaster Service Areas	Snow Course* Group Related to Each Service Area	Calif. I. D. No.	Elevation (in feet)	WATER CONTENT OF SNOW				
				April 1 Average (in inches)	April 1, 1994		May 1, 1994**	
					In inches	In Percent of April 1 Average	In inches	In Percent of April 1 Average
Ash Creek	Blue Lake Ranch (BLU)	28	6,800	10.6	7.9	74		
Burney Creek	Thousand Lakes (THL)	33	6,500	34.0	25.0	73	15.3	45
Butte Creek	Silver Lake Meadows (SVR)	45	6,450	30.2	16.1	53	4.0	13
Cow Creek	New Manzanita Lake (NMN)	343	5,900	7.3	5.5	75		
Digger Creek	Burney Springs (BNS)	41	4,700	2.0	0.0	0		
Hat Creek	New Manzanita Lake (NMN)	343	5,900	7.3	5.5	75		
Indian Creek	Independence Lake (IDN)	86	8,450	43.2	26.3	61	19.4	45
Middle Fork Feather River	Rowland Creek (RWL)	280	6,700	17.3	8.4	48	0.9	5
	Yuba Pass (YBP)	74	6,700	29.4	12.1	41		
	Mount Dyer No. 1 (MDY)	48	7,100	25.3	15.8	62	7.0	28
North Fork Pit River	Cedar Pass (CDP)	30	7,100	17.3	11.2	65		
Scott River	Middle Boulder No. 3 (MB3)	5	6,200	27.2	19.8	73	3.2	12
Shasta River	Little Shasta (LSH)	2	6,200	19.8	10.2	52		
	Parks Creek (PRK)	1	6,700	36.5	20.6	56		
South Fork Pit River	Adin Mountain (ADM)	35	6,750	12.8	9.3	73	0.2	2

* Snow courses are listed in order of elevation with each geographical group of watermaster areas.
** Data collected only at courses listed.

TABLE 5

1993-94 RUNOFF AT SELECTED STATIONS
(Acre-Feet)

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual Total	Long Term Average	Percent of Average
Bidwell Creek near Fort Bidwell	324	291	341	274	270	533	898	1,609	587	225	110	94	5,554	18,000	31
Burney Creek at Burney	1,540	1,380	NR	NR	2,470	4,260	2,940	2,460	764	414	240	369	NR	57,000	NR
Butte Creek near Chico	7,640	7,350	14,890	12,700	22,290	21,990	18,420	18,100	9,580	7,300	4,860	4,840	150,000	288,700	52
Hat Creek near Hat Creek	6,820	6,600	6,760	6,770	6,020	6,710	6,460	8,250	6,600	5,900	5,830	5,390	78,080	102,900	76
Pit River near Canby	6,170	6,290	6,520	6,020	5,640	10,950	5,160	14,820	2,590	440	1,330	2,710	68,660	174,800	39
Scott River near Fort Jones	5,760	4,500	9,480	14,550	12,800	21,260	18,930	28,000	6,770	790	358	283	121,500	451,300	27
Shasta River near Yreka	8,900	9,550	10,380	10,700	9,960	8,760	3,050	4,810	1,610	1,030	865	1,790	71,400	131,900	54
Susan River at Susanville	540	501	746	727	943	3,420	2,760	5,140	2,140	46	39	56	17,060	63,840	27

SERVICE AREA DESCRIPTIONS AND 1994 WATER SUPPLY STATISTICS

SERVICE AREA DESCRIPTIONS AND 1994 WATER SUPPLY STATISTICS

This portion of the report consists of 15 sections, one for each service area active in 1994, presented in alphabetical order.

Each of these sections presents a description of the particular service area, including location, geography, and general characteristics. Following this is a section entitled "Basis of Service," which includes such data as the case number, date, type of decrees, a brief summary of the decree or agreement that defines the water rights, the date the service area was created, and other related information.

These service area descriptions also give data on the water supply, methods of distribution, significant events of the watermaster season, and daily streamflow records. The listings of water right holders are updated as of March 1 each year from County Assessors' records.

As in previous years, watermaster service was activated on different dates in the various areas depending upon the streamflow conditions, the ranchers' needs for the water, or, as on some streams, the terms of the decrees. Service was continued in all areas through the growing season as long as needed.

The date service was started and ended in each service area and the name of the watermaster in charge are listed on Table 6.

TABLE 6

1994 SERVICE DATES AND WATERMASTERS

Service Area	Service Dates		Watermaster
	Began	End	
Ash Creek	April 1	September 30	James P. Langley
Big Valley	May 1	September 30	Kenneth E. Morgan
Burney Creek	May 1	September 30	Kenneth E. Morgan
Butte Creek	April 1	October 15	John A. Nolan
Cow Creek	May 1	October 30	John A. Nolan
Digger Creek	June 1	September 30	John A. Nolan
Hat Creek	May 1	October 28	Kenneth E. Morgan
Indian Creek	March 26	October 1	Ralph D. Howell
M. F. Feather River	March 15	September 30	Ronald A. Vanscoy
	April 18	September 30	Charles D. Hand
N. F. Cottonwood Creek	June 1	September 30	John A. Nolan
N. F. Pit River	April 1	September 30	James P. Langley
Scott River	April 1	September 30	Keithal B. Dick
Shasta River	April 1	September 30	Keithal B. Dick
	April 1	September 30	Lester L. Lighthall
Surprise Valley	March 19	September 30	George M. Fitzmorris
Susan River	March 1	November 1	Virgil D. Buechler

ASH CREEK WATERMASTER SERVICE AREA

ASH CREEK WATERMASTER SERVICE AREA

The Ash Creek service area is in Modoc and Lassen counties near the town of Adin, about 100 miles northeast of Redding via Highway 299E. The major sources of water for the service area are Ash Creek and three tributaries; Willow, Rush and Butte creeks. Ash Creek rises in Ash Valley in the southeastern part of the service area, and flows northwesterly about 18 miles to its confluence with Rush Creek, then southwesterly to the town of Adin, and then westerly to Ash Creek Swamp and Pit River. Butte and Willow creeks head in the mountains to the east and flow northwesterly into Big Valley. Butte Creek meets Ash Creek near the head of the Valley at Adin. Willow Creek flows into Ash Creek about 3 miles farther west, near the head of Ash Creek Swamp. The valley floor elevation in this vicinity is about 4,200 feet.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 3670, Modoc County Superior Court, dated October 27, 1947. From 1949 through 1958, Ash Creek was included as a part of Big Valley watermaster service area. The Ash Creek service area has been served separately since April 3, 1959.

About 85 percent of the water rights in the service area are in Big Valley, west of the town of Adin. The rest are along the upstream tributaries and in Ash Valley, east of Adin. The part of Big Valley served is about 10 miles long by 6 miles wide, extending from Adin to the confluence of Ash Creek and the Pit River.

The Ash Creek Decree establishes the number of priority classes on the individual streams within the service area as follows: Ash Creek - five, Willow Creek - four, Rush Creek - one, and Butte Creek - two. Each of these streams is independently regulated.

Water Supply

The water supply for Ash and Rush creeks comes mainly from snowmelt, since most of the watershed is between 5,000 and 6,000 feet in elevation. Willow Creek and Butte Creek get much of their water from springs. These creeks normally have enough water to satisfy demands until about June 1, after which the supply decreases rapidly. By the end of June, Ash Creek normally has receded to about 20 cubic feet per second (cfs), and Butte Creek to less than 1 cfs. The flow of these creeks then remains nearly constant for the rest of the season. Records of the daily mean discharge of stream gaging station, Ash Creek at Adin, are presented in Table 7. The flow in Willow Creek above Diversion No. 92 and 93 is presented in Table 8.

Method of Distribution

Irrigation from Ash Creek and its tributaries uses numerous small dams to divert flow into systems of ditches. The ditches deliver the water to the

ASH CREEK WATERMASTER SERVICE AREA

TABLE 7

1994 Daily Mean Discharge
(In cubic feet per second)

ASH CREEK AT ADIN

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	93	40	29	21	13	15	11
2	82	39	28	22	16	16	16
3	75	44	28	21	14	16	16
4	71	43	28	21	15	19	17
5	142	43	30	21	19	23	20
6	117	43	35	25	16	21	20
7	81	40	59	32	15	22	17
8	74	41	49	19	16	20	17
9	69	46	51	20	19	13	19
10	68	46	42	45	23	14	22
11	80	40	33	25	22	11	25
12	72	40	31	21	23	12	25
13	61	42	31	20	26	12	18
14	57	41	27	21	22	14	14
15	55	38	28	21	20	18	14
16	52	37	30	21	23	19	14
17	51	35	32	21	25	18	13
18	48	34	31	20	23	15	14
19	52	34	36	18	23	13	14
20	49	33	43	17	17	14	13
21	46	32	42	18	20	13	13
22	49	29	36	17	22	15	15
23	51	28	32	15	20	15	16
24	58	34	29	16	24	10	18
25	59	36	27	17	27	12	16
26	49	37	26	18	23	12	16
27	44	37	25	17	27	13	16
28	42	33	23	16	26	13	18
29	41	31	18	16	20	10	20
30	42	30	16	14	20	11	18
31	42		17		19	12	
MEAN	63.6	37.5	32.0	20.5	20.6	14.9	16.8
AC-FT	3911	2233	1968	1222	1265	914	1002

ASH CREEK WATERMASTER SERVICE AREA

TABLE 8

1994 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK ABOVE DIVERSIONS 92 AND 93

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		6.7[1/]	5.6	5.1	4.2	3.5	3.5
2		6.7	5.6	4.9	4.0	3.5	3.7
3		6.7	5.9	4.9	4.0	3.7	3.7
4		6.7	6.2	4.7	3.7	3.7	3.7
5		6.7	6.4	4.2	3.7	3.5	3.7
6		6.7	7.2	4.7	3.7	3.5	3.7
7		7.0	9.9	5.1	3.5	3.5	3.7
8		8.4	7.2	5.4	3.5	3.5	3.7
9		8.4	9.3	5.4	3.7	3.5	3.7
10		7.8	6.4	5.4	3.7	3.3	3.7
11		7.5	7.2	5.4	3.7	3.3	4.0
12		7.2	6.7	4.9	3.7	3.3	4.0
13		6.2	5.6	4.9	3.5	3.3	4.0
14		5.9	5.4	4.7	4.0	3.3	4.2
15		5.9	5.4	4.9	4.2	3.3	4.0
16		5.6	5.4	4.9	3.7	3.5	3.5
17		5.9	6.4	4.7	4.0	3.5	3.7
18		5.6	6.4	4.7	3.7	3.5	3.7
19		5.6	7.0	4.4	3.7	3.5	4.0
20		6.2	7.0	4.2	3.7	3.5	4.0
21		6.2	6.7	4.0	3.7	3.5	4.0
22		6.2	6.7	4.2	4.0	3.5	4.0
23		6.4	5.6	4.0	4.0	3.5	4.0
24		6.4	5.1	4.2	4.0	3.7	4.0
25		7.0	5.1	4.2	4.0	3.7	4.0
26		7.2	5.9	4.2	4.0	3.7	4.0
27		7.8	5.4	4.2	3.7	4.0	4.0
28		7.0	4.9	4.2	3.7	4.0	4.0
29		6.4	4.7	4.2	3.7	3.7	4.2
30		5.9	4.9	4.2	3.7	4.0	4.2
31			4.9		3.7	4.0	
MEAN		6.7	6.2	4.6	3.8	3.6	3.9
AC-FT		396	381	276	234	219	231

[1/] No record before April 1.

various fields for spreading. Wild flooding is the method most used, but some ranchers have checks and ditches and some use pumps to operate sprinklers or to lift water to higher spreading ditches. In some cases, runoff water is captured and reused before it returns to the stream.

1994 Distribution

Watermaster service began in the Ash Creek watermaster service area on April 1 and continued until September 30. Jim Langley, Water Resources Engineering Associate, served as watermaster. The snowpack was about 75 percent of normal, but spring rains made for a good early irrigation but lack of rain after the first week of June made for an average irrigation for the remainder of the year.

Ash Creek

Third-priority water was available the first of May then quickly decreased to first-priority water by the end of May and stayed fairly constant the rest of the watermaster season.

Willow Creek

The stilling well had to be repaired and attached to a wingwall before the quantities of water could be recorded. No third-priority water was available the entire watermaster season. The flow on the first of April was 6.7 cfs and slowly decreased to 3.7 cfs the first part of July and stayed constant the rest of the irrigation season.

Rush Creek

Full-priority water was available until the first part of June then gradually decreased to 2.4 cfs (46 percent of first priority water rights) by the middle of July and stayed fairly constant the rest of the watermaster season.

Butte Creek

The flow in Butte Creek was less than full third priority the first of April and slowly decreased to a trickle (.10± cfs) by the end of July and remained at that flow to the end of the watermaster season.

BIG VALLEY WATERMASTER SERVICE AREA

BIG VALLEY WATERMASTER SERVICE AREA

The Big Valley service area is in Modoc and Lassen counties in the vicinity of the towns of Lookout and Bieber, about 90 miles northeast of Redding via State Route 299E.

The Pit River is the major source of water regulated by the watermaster. The river enters the valley north of the town of Lookout and flows southerly through the western part of the valley and out at the southern end. The major area of use is along approximately 13 miles of valley floor, up to 6 miles wide, along the Pit River at an approximate elevation of 4,200 feet.

Basis of Service

The Big Valley watermaster service area was created on November 13, 1934, and service began with the 1935 season, operating under an agreement to determine water rights recorded in 1934. The water rights in this service area were set forth in Decree No. 6395, Modoc County Superior Court, a statutory decree, dated February 17, 1959.

Distributing the water on a continuous flow basis, as provided by the decree, has proven impracticable to the users who employ wild flooding or border irrigation practices because of the wide variation of flows. By mutual agreement, an alternative procedure allowing each user a definite amount of water in acre-feet for each cubic foot per second of right allocated by the decree has been adopted. The watermaster estimates the probable amount of water available for the next 15 to 30 days and chooses the appropriate ac-ft/cfs ratio with a view to completing the rotation through the valley in not more than 30 days.

The irrigators using pumps and sprinklers have elected to receive their water on a more or less continuous flow basis. Over the years, different ways have been employed to insure that applications of small amounts over extended periods result in no advantage over the flooders who use large amounts for very short periods.

Water Supply

The flow in the Pit River at the head of Big Valley is mostly from direct runoff, mainly snowmelt, and return flow is mostly from irrigation water released from West Valley Reservoir above South Fork Pit River and Big Sage Reservoir above Hot Springs Irrigation District.

The available water supply in the Pit River as it flows through Big Valley used to be adequate to satisfy all demands until about June 1. The irrigation practices in Hot Springs Irrigation District, about 20 miles upstream from Big Valley, have a significant effect on the available water supply in Big Valley. Water users in Hot Springs Irrigation District divert most of the flow of the

Pit River for two- or three-week periods. In recent years, Hot Springs Irrigation District has improved the use and coordinated the distribution of its water, so releases from its system are less than they were 10 years ago. However, Big Valley Irrigation District water users are unable to keep much stock water in August and September.

Several users, who irrigate crops by sprinkling, have drilled wells to supplement their water supply. Some of these are several miles upstream from the place of use, and the Pit River is used to convey it downstream to where it is pumped out. The users who irrigate by flooding have not changed nor improved their practices.

Roberts Reservoir, which stores runoff of a minor tributary to the Pit River near the upper end of Big Valley above Lookout, serves as a supplemental source of water to those users in the area who are members of the Big Valley Mutual Water Company. Water from this reservoir is released into the Pit River and distributed to members of the water company along with the natural flow to which they are entitled.

The daily mean discharge of the Pit River near Canby stream gaging station is presented in Table 9.

Method of Distribution

Most water users in the Big Valley service area irrigate on a rotation schedule, either by wild flooding or by checks and borders. Large flashboard dams placed in the channel make it possible to use the large heads of water characteristic of the supply in the area. In addition, some pumps are used for diversion, both in ditches and directly into sprinkler systems. The ranches which irrigate by wild flooding must use large heads of water in order to cover unleveled or high ground. Some of the runoff is recaptured for use by downstream lands.

1994 Distribution

Watermaster service in Big Valley began on May 1 and continued through September 30, with Kenneth E. Morgan, Water Resources Engineering Associate, as watermaster.

The water supply in the Pit River for the Big Valley area during the 1994 season was below normal. The snowpack in the upper Pit River basin was below normal during the winter months. A major storm during mid-May produced the highest streamflow of the entire water year.

One hundred percent of second-priority water was available in Big Valley from May 6 through June 8 during which time more than 3 inches of precipitation fell over the valley.

Gerig Dam was drawn down for haying starting on June 16 which provided some irrigation below Highway 299 for several days. Gerig finished haying on July 21 and Roberts Reservoir water was released to him. About 250 acre-feet was released for channel storage behind Kramer and Gerig dams before irrigation could begin.

BIG VALLEY WATERMASTER SERVICE AREA

TABLE 9

1994 Daily Mean Discharge
(In cubic feet per second)

PIT RIVER NEAR CANBY[1/]

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	338	124	105	98	10	3.3	50
2	257	103	68	101	8.7	5.4	143
3	206	93	33	96	8.2	11	135
4	171	94	40	93	8.6	8.0	55
5	206	95	102	90	8.4	10	33
6	336	99	184	79	7.3	9.6	14
7	341	100	486	77	6.6	7.7	12
8	236	102	543	70	5.1	5.9	13
9	173	103	526	49	1.7	5.0	13
10	141	114	427	25	0.4	5.5	12
11	158	133	409	14	13	5.4	8.7
12	170	154	342	14	26	5.8	27
13	172	125	307	26	8.6	6.7	39
14	154	108	254	44	3.2	7.0	193
15	132	99	228	46	2.1	7.2	61
16	116	89	190	58	2.2	6.4	14
17	105	71	203	54	1.6	7.7	10
18	99	34	219	43	1.3	7.7	7.7
19	108	50	283	28	1.1	68	8.3
20	111	55	331	30	0.9	105	7.6
21	106	32	414	27	0.8	50	7.4
22	113	20	442	21	0.7	36	7.8
23	136	20	395	15	8.1	50	7.6
24	149	24	349	14	32	26	10
25	195	33	195	14	31	12	63
26	246	68	101	19	12	23	61
27	244	130	86	17	5.4	42	82
28	186	118	28	15	2.6	25	88
29	151	106	47	14	1.4	21	100
30	134	107	78	13	1.3	33	84
31	132		57		1.5	53	
MEAN	178	86.8	241	43.5	7.2	21.6	45.6
AC-FT	10950	5160	14820	2590	440	1330	2710

[1/] USGS station

Roberts Reservoir did not fill during 1994; however, 1,100 acre-feet was released between July 21 and August 27 to shareholders of the reservoir.

Roberts Reservoir water surface was 36 inches below the top of the concrete at the headgate on July 21 when the first releases were made and 76 inches on August 27 when the headgate was closed.

Only first-priority river water, which is for channel storage and stock-water, was available from June 23 until August 19. From August 20 until September 30, a rotation for flooders of 10 acre-feet per cfs of second-priority water right was delivered.

About 834 acre-feet was imported to the Pit River from ground water wells and pumped from the river to irrigate alfalfa fields. The measurement of the import water was accomplished by various methods including weirs, flow meters, and pump kilowatt-hour usage. Some alfalfa growers cut a fourth crop of hay.

The meadow hay was an excellent quality and quantity due to the May rains.

BURNEY CREEK WATERMASTER SERVICE AREA

BURNEY CREEK WATERMASTER SERVICE AREA

The Burney Creek service area is in eastern Shasta County above and below the town of Burney. The source of water for this service area is Burney Creek, which enters the southern part of the service area and flows through Burney in a northerly direction to the Pit River. The part of the valley served by this stream is about 11 miles long and 2 miles wide and extends both north and south of Burney.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 5111, Shasta County Superior Court, dated January 30, 1926. Watermaster service was provided on the creek from 1926 to 1929 under the Water Commission Act of 1913. The present service area was created on September 11, 1929.

The Burney Creek decree sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis (one priority class plus surplus allotments), which is now normal practice. The water allotted to the Greer-Cornaz Ditch is distributed according to supplemental court decrees.

Water Supply

The water supply for Burney Creek comes from springs and snowmelt. Most of the watershed lies between the elevations of 4,000 and 7,500 on the northwest slopes of Burney Mountain. The creek normally has enough water for all demands until about the middle of June. The supply then gradually decreases until the end of July. For the rest of the irrigation season, runoff from perennial springs keeps the flow nearly constant at about 40 percent of allotments.

The daily mean discharge of Burney Creek near Burney is presented in Table 10. The stream gaging station on Burney Creek is downstream from four points of diversion, so the records do not show all of the available water supply of the creek.

Method of Distribution

Water is diverted from Burney Creek, in most cases, by means of low diversion dams into ditches that convey it to the individual users. Some users are still using flood irrigation, while some of the lower users are pressurizing the water with low lift pumps and sprinkler irrigation.

BURNEY CREEK WATERMASTER SERVICE AREA

TABLE 10

1994 Daily Mean Discharge
(In cubic feet per second)

BURNEY CREEK NEAR BURNEY

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	76	50	33	20	8.6	4.6	4.8
2	71	52	32	18	9.4	4.2	5.4
3	71	53	31	17	8.4	3.5	5.7
4	79	52	37	16	8.6	3.5	6.3
5	101	49	54	16	8.3	3.7	5.5
6	93	55	63	20	7.9	3.8	5.4
7	87	64	83	17	7.1	3.7	4.9
8	83	58	83	15	7.0	3.7	5.6
9	79	78	70	14	7.3	3.9	6.4
10	86	68	55	14	7.3	3.9	6.5
11	88	56	46	14	7.5	3.6	6.8
12	75	52	41	13	7.4	3.8	7.1
13	71	50	36	14	7.4	4.0	6.8
14	71	46	33	13	7.4	4.0	6.6
15	74	45	42	14	7.6	4.1	6.4
16	85	47	53	13	7.4	3.7	6.0
17	92	48	46	14	6.8	3.7	5.8
18	78	48	40	13	6.9	3.5	5.8
19	82	49	40	12	6.2	3.6	5.5
20	69	48	44	11	6.0	3.2	5.2
21	51	45	39	8.7	6.0	3.1	5.2
22	44	42	33	8.7	6.2	3.0	5.5
23	42	41	30	8.3	6.4	2.8	6.3
24	39	41	28	7.6	5.8	2.9	6.9
25	53	47	26	9.4	5.1	3.8	7.8
26	50	46	24	9.4	4.9	4.6	7.2
27	49	44	22	9.3	4.7	5.5	6.8
28	51	39	21	8.6	4.7	5.3	7.1
29	52	35	20	8.6	4.8	5.2	7.7
30	52	35	18	8.5	4.8	4.7	7.2
31	52		17		4.6	4.5	
MEAN	69.2	49.4	40.0	12.8	6.7	3.9	6.2
AC-FT	4257	2941	2460	764	414	240	369

1994 Distribution

Watermaster service on Burney Creek began on May 1 and continued through September 30, with Kenneth E. Morgan, Water Resources Engineering Associate, as watermaster.

The water supply on Burney Creek was below normal.

A surplus of streamflow was available until the end of May at which time the snow runoff was nearly depleted. The flow decreased thereafter, and by July 1, 50 percent of the water rights were available. From mid-July through September 30, the available flow was about 30 percent.

The invert of the headgate at the head of the Greer-Cornaz Ditch was lowered 6 inches. The entire length of the Greer-Cornaz Ditch was cleaned during September.

BUTTE CREEK WATERMASTER SERVICE AREA

BUTTE CREEK WATERMASTER SERVICE AREA

The Butte Creek service area is in Butte County a few miles southeast of the City of Chico. The watermaster service area runs about 11 miles along Butte Creek, starting about 4 miles east of Chico and running downstream to the crossing of the Western Canal. It contains about 20,000 acres of valley floor lands at an average elevation of 150 feet.

Basis of Service

The rights on this stream system were determined by a statutory adjudication and set forth in Decree No. 18917, Butte County Superior Court, dated November 6, 1942. The Butte Creek watermaster service area was created on January 7, 1943.

The Butte Creek decree established three priority classes for summer use under Schedule 7, a surplus class inferior to the above rights, and a special class for Hamlin Slough. Schedule 3 of the decree defines the rights for rediversion (Diversion 50) of foreign water delivered into Butte Creek from the West Branch of the Feather River.

On September 18, 1969, the State Water Resources Control Board granted permits for the following applications to take water from Butte Creek: application 22321, Gorrill Land Company; 22534, Garrison Patrick; and 22564, Louis C. Camenzind, Jr. These appropriative rights are also under control of the watermaster.

Water Supply

Butte Creek, the major source of water, drains about 150 square miles of the western slope of the Sierra Nevada in the northeasterly part of Butte County above the watermaster service area. The highest elevation in the watershed is about 7,000 feet.

Normally, snowmelt produces sustained high flows in the creek until about the end of June, after which perennial springs above Diversion 50 continue to produce flows of more than 40 cfs. Additional water is imported for distribution from the West Branch Feather River by means of the Hendricks (Toadtown) Canal through De Sabla Reservoir and Powerhouse into Butte Creek.

Records of the daily mean discharge at stream gaging stations in the Butte Creek service area are presented in Tables 11, 12, and 13.

Method of Distribution

Water is diverted from Butte Creek by pumping and by gravity diversions. Parrott Investment Company, M & T, Inc., Dayton Mutual Water Company, and Durham Mutual Water Company divert relatively large amounts of water by gravity into ditches leading to their individual distribution systems. Various methods of irrigation are in general practice, including contour

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 11

1994 Daily Mean Discharge
(In cubic feet per second)

BUTTE CREEK NEAR CHICO[1/]

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	424	291	286	203	116	144	81
2	420	291	278	196	111	143	68
3	416	293	275	190	109	143	66
4	406	292	280	185	108	122	69
5	480	290	312	183	105	100	72
6	471	287	348	194	103	91	71
7	428	310	417	189	101	95	72
8	398	308	382	190	143	97	71
9	390	400	365	188	153	89	72
10	383	346	351	181	154	74	74
11	414	316	332	175	155	63	75
12	374	305	322	171	154	68	76
13	361	301	307	169	152	77	109
14	362	299	289	165	122	73	146
15	365	299	283	160	101	66	146
16	358	301	325	159	103	59	144
17	349	305	330	157	104	60	113
18	338	305	319	153	105	60	71
19	336	307	313	148	102	60	71
20	333	308	301	145	102	60	72
21	321	301	290	142	100	61	70
22	321	298	278	139	99	67	70
23	313	297	270	136	100	76	69
24	301	305	261	134	101	71	70
25	293	345	252	134	98	74	72
26	284	348	250	133	119	82	72
27	283	328	238	129	146	81	72
28	287	317	228	126	147	78	71
29	291	301	220	123	145	76	71
30	292	293	214	120	145	78	76
31	293		208		144	78	
MEAN	358	310	294	161	121	82.8	81.7
AC-FT	21990	18420	18100	9550	7430	5090	4860

[1/] USGS station.

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 12

1994 Daily Mean Discharge
(In cubic feet per second)

BUTTE CREEK NEAR DURHAM

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	397	174	116	43	6.0	12	13
2	392	166	108	30	7.1	9.4	16
3	384	NR	83	23	7.4	8.2	9.2
4	367	NR	91	23	7.4	8.2	9.3
5	439	NR	156	21	6.8	8.6	9.5
6	446	183	201	20	7.9	8.8	13
7	395	209	319	21	8.2	9.0	19
8	361	205	309	30	13	9.3	19
9	349	328	275	33	23	9.3	20
10	332	286	221	31	27	9.3	21
11	369	222	219	29	28	9.5	22
12	327	212	NR	29	30	9.3	23
13	310	221	NR	28	26	9.3	38
14	308	218	NR	26	8.2	9.3	85
15	311	212	NR	18	8.2	9.9	98
16	306	201	NR	17	8.2	9.3	95
17	298	208	NR	16	8.2	9.3	79
18	287	NR	219	15	8.3	9.3	38
19	284	NR	197	14	8.7	9.0	37
20	271	NR	179	14	8.7	9.3	38
21	257	NR	167	9.8	8.7	9.5	32
22	263	NR	160	8.4	8.7	9.3	28
23	276	NR	146	6.1	8.7	12	25
24	227	NR	116	5.8	8.7	9.6	25
25	196	NR	89	5.9	8.7	8.7	27
26	184	NR	84	6.1	8.7	13	20
27	180	NR	61	6.1	10	13	9.3
28	185	189	53	6.4	8.7	12	9.5
29	192	179	49	12	8.7	14	11
30	194	144	47	22	8.7	16	9.9
31	186		49		8.7	12	
MEAN	299	NR	NR	19.0	11.4	10.2	30.0
AC-FT	18390	NR	NR	1130	701	624	1783

NR - No record

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 13

1994 Daily Mean Discharge
(In cubic feet per second)

TOADTOWN CANAL ABOVE BUTTE CANAL[1/]

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	104	118	117	84	46	80	22
2	110	118	117	80	41	81	22
3	112	118	116	77	40	80	22
4	114	118	114	75	39	56	22
5	119	118	115	73	39	43	22
6	115	118	115	80	38	40	22
7	114	118	115	78	37	40	22
8	115	118	116	87	83	38	22
9	116	118	118	87	83	21	22
10	117	117	118	83	82	16	22
11	106	118	119	80	81	9.3	22
12	115	119	117	77	80	14	24
13	117	119	116	75	80	15	68
14	118	118	116	73	47	15	89
15	118	117	115	69	35	8.6	87
16	115	117	112	67	38	2.7	85
17	115	117	115	66	39	4.6	44
18	116	117	116	65	37	5.8	21
19	117	117	116	63	37	7.0	20
20	119	116	117	62	38	8.1	21
21	118	116	118	60	37	8.5	21
22	117	116	118	59	37	13	20
23	116	119	117	57	37	16	20
24	114	118	110	56	37	16	21
25	110	112	111	55	37	21	21
26	109	111	110	54	71	22	21
27	114	116	103	53	82	22	20
28	119	117	98	51	82	22	21
29	119	117	94	50	81	22	22
30	118	117	90	48	80	22	23
31	118		87		80	22	
MEAN	115	117	112	68.1	54.9	25.5	30.4
AC-FT	7070	6970	6890	4030	3370	1570	1810

[1/] PG&E station

checks, strip or border checks, basin checks, furrows, wild flooding, and sprinklers. The use of sprinklers has increased in the past few years, especially for orchards.

1994 Distribution

Watermaster service began April 1 in the Butte Creek service area and continued until October 15 with John A. Nolan, Water Resources Engineering Associate, as watermaster.

The water supply for the 1994 irrigation season was below normal. The appropriative rights that are in addition to the Butte Creek decree were partially filled until the third week in May, at which time all of the rice fields were flooded. The surplus class priority was available through the third week of June. The flow in the creek receded rapidly after the snowmelt was gone. There was only first-priority water available by mid-July.

Diversion 50 was shut off from mid-August to late September to construct a new fish screen project near the head of the ditch. The water that normally would have been diverted here went on downstream to provide 100 percent of first-priority water right to the downstream users.

COW CREEK WATERMASTER SERVICE AREA

COW CREEK WATERMASTER SERVICE AREA

The Cow Creek service area is in central Shasta County in the foothills east of Redding. Water for this service area comes from three major creek systems. They are North Cow Creek (sometimes referred to as Little Cow Creek), Oak Run Creek, and Clover Creek. These creeks flow westerly to their confluence in the Millville-Palo Cedro area, then south to the Sacramento River east of the City of Anderson. The service area is generally a narrow strip of land on both sides of each of these creeks. In some cases, water is exported from one creek to the other.

Basis of Service

The water rights on each of these creek systems were determined by court references and set forth in separate decrees. Water rights for these creeks were set forth by Shasta County Superior Court decrees as follows:

Creek	Decree No.	Date
North Cow	5804	April 29, 1932
Oak Run	5701	July 22, 1932
Clover	6904	October 4, 1937

The North Cow Creek decree, which includes Cedar Creek, sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis, which is now normal practice. Only one priority allotment was provided in each of the Cow Creek service area decrees, except for the Oak Run Creek decree, which contains a surplus allotment.

The Cow Creek watermaster service area was originally created on October 17, 1932, including North Cow Creek and Oak Run Creek water rights. On January 21, 1938, the service area was expanded to include the Clover Creek rights.

Water Supply

Water for this service area comes mostly from springs and seepage, with some early snowmelt runoff. The watershed varies in elevation from 500 to 5,000 feet and consists mainly of low, brushy hills that do not accumulate a heavy snowpack. Relatively large amounts of precipitation during the winter normally produce substantial seepage and springs that flow through the irrigation season. The creeks normally have sufficient water to supply all demands until late July. The supply then gradually decreases to an average of about 60 to 70 percent of allotments by around mid-September.

The daily mean discharge of North Cow Creek near Ingot is presented in Table 14. The stream gaging station on North Cow Creek is downstream of

COW CREEK WATERMASTER SERVICE AREA

TABLE 14

1994 Daily Mean Discharge
(In cubic feet per second)

NORTH COW CREEK NEAR INGOT

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1				32[1/]	11	6.1	8.0
2				31	10	9.5	9.5
3				29	10	8.7	9.6
4				29	10	8.7	9.6
5				29	9.9	9.5	9.6
6				31	9.8	9.5	9.5
7				29	9.7	7.3	8.7
8				27	9.5	8.7	9.5
9				26	8.0	8.7	9.6
10				23	6.7	9.5	9.8
11				22	5.6	8.0	9.9
12				21	5.2	7.3	9.8
13				20	4.7	8.0	9.8
14				19	4.7	7.3	9.7
15				18	4.0	7.3	9.7
16				18	4.0	8.0	9.5
17				17	4.0	7.3	9.5
18				17	3.6	7.3	9.5
19				15	4.0	6.7	6.7
20				15	4.0	6.7	6.7
21				14	4.3	7.3	6.1
22				14	4.7	8.0	6.1
23				14	6.7	8.0	7.3
24				13	6.7	7.3	9.8
25				13	6.7	8.0	10
26				12	5.6	8.7	11
27				12	5.6	9.5	10
28				11	6.1	9.5	10
29				11	6.7	9.5	9.8
30				11	6.1	9.5	9.8
31					6.1	8.7	
MEAN				19.8	6.6	8.2	9.1
AC-FT				1176	404	504	544

[1/] No record before June 1.

many of the diversions and is used by the watermaster, mainly to indicate changes in flow conditions rather than amounts of water available. Consequently, the records do not show all the available water supply of the creek.

Method of Distribution

Water is diverted from the creeks, in most cases by means of low diversion dams, into ditches that convey it to the place of use. Lateral ditches are then used to spread it over the land. Irrigation has been on a continuous-flow basis instead of by rotation since 1934.

1994 Distribution

Watermaster service for North Cow Creek began on May 1 and continued through October 30 with John A. Nolan, Water Resources Engineering Associate, as watermaster.

Cedar Creek

The flow in Cedar Creek was adequate to supply all demands throughout the season.

Clover Creek

The flow was adequate to supply 100 percent of all allotments through the middle of June. It then receded through the remainder of the season to a low of 50 percent of all allotments by the end of September.

North Cow Creek

The flow was adequate to supply well over 100 percent of all allotments through the first week in July. It then receded to a seasonal low of 50 percent of all allotments by mid-July. The flow then increased very slowly until 100 percent of all allotments were available at the end of September.

Oak Run Creek

The flow was adequate to supply 100 percent of all allotments throughout the season.

DIGGER CREEK WATERMASTER SERVICE AREA

DIGGER CREEK WATERMASTER SERVICE AREA

The Digger Creek service area is situated in southeastern Shasta County and northeastern Tehama County.

Digger Creek forms part of the boundary between Shasta and Tehama counties. It drains about 45 miles on the western slopes of the Sierra, just west of Lassen National Park. The creek flows west through the town of Manton to its confluence with North Fork Battle Creek. Manton, the only community in the area, lies about 40 miles northeast of Red Bluff.

Basis of Service

The rights to use of the waters of Digger Creek were determined by four court adjudications. Crooker Ditch, now combined with the Harrison Ditch, may divert all the water in the creek at its point of diversion. Diversions below this point, though defined by decree, are not in the service area.

Four Tehama County Superior Court decrees define the rights included in the service area. These decrees are listed in Table 15.

TABLE 15

DECREES DEFINING DIGGER CREEK WATER RIGHTS

Case	Decree No.	Date Entered
Gransbury et al. vs. Edwards et al.	2213	August 12, 1899
Wells et al. vs. Pritchard et al.	3214	May 27, 1913
Harrison et al. vs. Kaler et al.	3327	October 16, 1917
Herrick et al. vs. Forward et al.	4570	February 24, 1927

The four decrees have, in effect, divided the water rights on the creek into two groups, the upper users and the lower users. The three upper users irrigate land alongside the stream so that all run off water returns to Digger Creek. The lower users are located within a 5-square-mile area. Very little runoff from the lower users returns to the creek.

The water rights of the three upper users are absolute and not related to those of lower users; therefore, allotments are not cut proportionally as Digger Creek flows decrease. Since the lower users have to stand all deficiencies, the upper users, in effect, have first-priority allotments and the lower users have second- and third-priority allotments.

Water Supply

Snowmelt contributes to the early runoff, but the summer streamflow is primarily from springs. In average runoff years, there is sufficient flow in Digger Creek, with careful regulation, to satisfy all decreed allotments throughout the irrigation season, but serious deficiencies occur in dry years.

Method of Distribution

Irrigation is done mainly by wild flooding, although border checks and sprinklers are used on a few fields. Small diversion dams are placed in the stream channel to divert water into ditches for conveyance to the fields.

1994 Distribution

Watermaster service on Digger Creek began on June 1 and continued until September 30 with John A. Nolan, Water Resources Engineering Associate, as watermaster.

The winter of 1993 and spring of 1994 provided a very poor snowpack and low rainfall total. However, the available water supply from flowing springs was adequate to fill 100 percent of the lower users allotments until mid-July. The creek continued to recede through the end of September to a low of 70 percent of the lower users allotments.

HAT CREEK WATERMASTER SERVICE AREA

HAT CREEK WATERMASTER SERVICE AREA

The Hat Creek service area is in the eastern part of Shasta County, north of Lassen Volcanic Park. Hat Creek, which flows north through the area, is the only source of water in the service area. The place of use is Hat Creek Valley, which is about 20 miles long and 2 miles wide, running north from about 3 miles south of the town of Old Station to the confluence with Rising River. The irrigable lands, which consist primarily of volcanic ash, are interlaced with large volcanic rock outcropping.

Basis of Service

Hat Creek water is distributed under provisions of court reference adjudications which resulted in Decree No. 5724, dated May 14, 1924, and Decree No. 7858, dated May 7, 1935, Shasta Superior Court. Decree No. 5724 established irrigation and nonirrigation allotments for 18 periods of rotation between "upper" and "lower" user groups from May 1 to October 28 annually. Decree No. 7858 established three additional water right allotments for continuous irrigation, May 1 through October 28, and allotments for October 28 to May 1 annually for all users. These latter rights are not normally supervised by the watermaster.

Watermaster service in the Hat Creek area has been provided in accordance with the decree since 1924. The existing service area was created on September 11, 1929.

Decree No. 5724 defines the allotments in the separate schedules: upper and lower users, requiring 10-day rotations beginning at 6 a.m., May 1, and ending at 6 a.m., October 28. All water rights have the same priority, with the surplus flows distributed according to the users that are on rotation. The upper users' water rights require 153.135 cfs and lower users require 166.285 cfs. When the upper users are being served, the lower users receive a minimum flow for stock water.

Water Supply

The water supply for Hat Creek comes from snowmelt runoff from Lassen Peak and from large springs. Snowmelt creates a high flow during May and June, but most of the summer supply comes from large springs that decrease only slightly in output. Only after a series of dry years does the flow of these springs decrease below 75 percent of total allotments. Records of mean daily discharge of Hat Creek near Hat Creek are in Table 16.

Method of Distribution

Most irrigation in the area is done by wild flooding. Large heads of water are used to cover the land rapidly, thereby preventing excessive loss from percolation in the porous soil. Diversion dams built across the creek divert

HAT CREEK WATERMASTER SERVICE AREA

TABLE 16

1994 Daily Mean Discharge
(In cubic feet per second)

HAT CREEK NEAR HAT CREEK[1/]

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	108	110	111	132	97	100	89
2	109	110	112	129	95	99	89
3	109	111	112	126	94	99	89
4	109	111	119	123	94	99	88
5	112	110	134	122	96	99	88
6	110	104	139	124	95	99	88
7	109	100	151	121	95	99	88
8	109	100	147	119	95	99	92
9	109	100	152	117	94	94	96
10	111	99	152	111	98	91	95
11	110	98	162	108	101	92	96
12	109	99	165	108	100	91	96
13	109	101	158	107	100	91	95
14	110	101	150	107	100	91	95
15	111	102	149	106	100	91	95
16	111	107	141	105	99	90	94
17	110	113	135	104	98	90	94
18	110	117	132	102	99	90	89
19	110	121	130	100	100	95	87
20	109	124	129	105	95	97	87
21	109	122	123	108	93	97	87
22	109	119	120	107	93	97	87
23	107	117	121	106	93	97	86
24	108	114	122	106	93	97	87
25	107	111	127	106	93	96	87
26	107	108	130	106	93	96	87
27	107	107	128	105	93	96	87
28	108	106	126	105	93	96	92
29	109	106	125	105	92	91	94
30	109	107	125	99	95	89	94
31	109		130		98	89	
MEAN	109	108	134	111	95.9	94.7	90.6
AC-FT	6710	6460	8250	6600	5900	5830	5390

[1/] USGS station.

water into large ditches. The fields, many of which have checks and borders, are then flooded from the main diversion ditches or from laterals. Several domestic rights are met by pumping directly from Hat Creek. Some ranchers have leveled their fields in recent years, thus improving their irrigation efficiency.

1994 Distribution

Watermaster service on Hat Creek began on May 1 and continued through October 28, with Kenneth E. Morgan, Water Resources Engineering Associate, as watermaster.

A below-normal snowpack in the watershed reduced the base flow of the springs about 15 percent in 1994.

The trial program of switching lower users rights with upper users to have a larger minimum flow in the lower stream continued again this season with success.

The percentages of available water for the upper and lower rotations during the 1994 irrigation season were as follows:

Percentage of Entitlement

Period	Upper Rotation	Lower Rotation
May 1 - May 10	80	
May 11 - May 20		100
May 21 - May 30	85	
May 31 - June 9		80
June 10 - June 19	70	
June 20 - June 29		60
June 30 - July 9	63	
July 10 - July 19		56
July 20 - July 29	60	
July 30 - August 8		50
August 9 - August 18	60	
August 19 - August 28		50
August 29 - September 7	60	
September 8 - September 17		50
September 18 - September 27	55	
September 28 - October 7		50
October 8 - October 17	55	
October 18 - October 27		60

INDIAN CREEK WATERMASTER SERVICE AREA

INDIAN CREEK WATERMASTER SERVICE AREA

The Indian Creek service area is in north central Plumas County, near Greenville. The major sources of supply in the service area are Indian Creek and two tributaries, Wolf Creek and Lights Creek. Indian Creek, along with minor tributaries, rises in the mountains east of the service area. It flows through Genesee and Indian valleys and past Taylorsville and Crescent Mills to where it joins the North Fork Feather River. Indian Creek is joined on the north by Lights Creek in southeast Indian Valley and by Wolf Creek in the northwest part of the valley. The major place of use is in Indian Valley, an irregular-shaped area of about 20 square miles. The average elevation is about 3,500 feet.

Basis of Service

The Indian Creek watermaster service area was created on February 19, 1951. It includes, with certain exceptions, the water rights set forth in Decree No. 4185, entered December 19, 1950, by the Superior Court of Plumas County, and the rights under Permit 7665 issued in approval of Application 12642 after entry of the decree. The statutory proceeding leading to the decree was entitled, "In the Matter of the Determination of the Rights of the Various Claimants to the Water of Indian Creek Stream System in Plumas County, California."

The service area has been amended twice. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports show the work accomplished. There are 49 water right holders in the service area, with allotments totaling 96.715 cfs. Indian Creek decree establishes three priority classes for each major stream within the service area.

Water Supply

The water supply in the Indian Creek service area comes mainly from snowmelt, with springs and seepage maintaining some late summer flows. The flow of Wolf Creek is normally sufficient to supply all allotments until June 1. Indian and Lights creeks normally have sufficient flow to supply all allotments until July 1. After these dates, flows decrease throughout the season and by the end of August, only a small part of the allotments are available.

Method of Distribution

The basic method of irrigation in Indian Valley is wild flooding. Small diversion dams are constructed in the stream channels to divert water into distribution ditches for conveyance to the fields. Small check dams, located throughout the fields in swales, help to spread the water over the ground. There is a limited amount of check and border irrigation in the valley, and a few sprinkler systems are in use.

1994 Distribution

Watermaster service began in the Indian Creek service area on March 26, 1994, and continued through October 1, 1994, with Ralph D. Howell, Water Resources Engineering Associate, as watermaster. The 1994 water season was well below average for the Indian Valley watermaster service area.

Wolf Creek

The water supply of Wolf Creek started the season with adequate water for all priorities. There was sufficient water for first priority through April. By the end of July, the flow was down to 20 percent of the first priority where it remained for the rest of the season.

Lights Creek and Tributaries

The available water supply of Lights and Cooks creeks was adequate to supply 100 percent of first priority water through May. By early July there was enough to supply 20 percent of the first priority and by late July no water was available.

Indian Creek

The available water supply of Indian Creek was adequate to supply all demands through May. By early July the flow was adequate to supply 75 percent of the first priority and remained at this level for the duration of the season.

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

The Middle Fork Feather River service area is in Sierra Valley on the west slope of the Sierra Nevada in eastern Sierra and Plumas counties.

Major sources of supply for this service area are the Middle Fork Feather River and its tributaries in Sierra Valley. The area comprises five major stream groups starting in the northeast corner of the valley and proceeding in a clockwise direction. These are Little Last Chance Creek, Smithneck Creek, Webber Creek and tributaries, West Side Canal, and Fletcher Creek and Spring Channels. The Middle Fork Feather River flows generally north for about 15 miles through Sierra Valley. It then flows out of the valley in a westerly direction near Beckwourth. The major place of use is in Sierra Valley which is about 15 miles long and 10 miles wide. The average elevation of the valley floor is 4,900 feet.

Basis of Service

The Middle Fork Feather River watermaster service area was created on March 29, 1940, to include, with the exception of certain tributaries and springs, all water rights set forth in Decree No. 3095, entered in the Middle Fork Feather River statutory adjudication proceeding on January 19, 1940, Superior Court, Plumas County. The decree establishes the number of priority classes for each of the major stream systems within the Middle Fork Feather River service area as follows: Little Last Chance Creek - eight; Smithneck Creek - five; West Side Canal Group - five; Fletcher Creek and Spring Channels - three; Webber Creek and tributaries - six; and Sierra Valley Water Company - one.

The service area has been amended three times. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports have been prepared to show the work accomplished.

There are currently 120 water right owners in the service area, with total allotments amounting to 376.739 cfs.

Water Supply

The major water supply in the Middle Fork Feather River service area comes from runoff, with minor flow from springs and supplemental and foreign water.

Natural flows of Little Last Chance Creek are supplemented by reservoir storage provided by Frenchman Dam, which was built by the Department of Water Resources in 1961. Stored water is released as needed under the provisions of a water supply contract.

Smithneck Creek flow is normally sufficient to supply all allotments until about the middle of May. It then decreases until about the first of June when only first- and second-priority allotments are available for the remainder of the season.

The natural flow of Webber Creek is normally sufficient to supply all allotments until the middle of May. At that time, up to 60 cfs is diverted from the Little Truckee River to supplement the natural flow. This imported water is diverted through the Little Truckee Ditch into Onion Creek and then into Webber Creek, via Cold Stream, for use of shareholders in the Sierra Valley Water Company. This supplemental supply decreases rapidly in July, producing only a small quantity during the latter part of the season.

The West Side Canal streams normally supply all allotments until early June. The flow then gradually declines throughout the remainder of the season. The flow of Fletcher Creek and Spring Channels normally supplies all allotments until July 1, and then gradually declines for the rest of the season.

Records of the daily mean discharges of Little Truckee Ditch and the Middle Fork Feather River near Portola are presented in Tables 17 and 18.

Method of Distribution

Wild flooding is used by most ranches to irrigate their fields. Small diversion dams are placed in the stream channels to divert the water into individual distribution systems. Check dams are constructed in the swales to implement flooding once the water reaches the fields.

1994 Distribution

Watermaster service began March 15 in the Middle Fork Feather River service area and continued until September 30, with Ronald A. Vanscoy, Water Resources Engineering Associate, as watermaster. The available supply in the service area was well below average during the season.

Little Last Chance Creek

Frenchman Dam and Reservoir began its thirty-second season of operation. A five-year contract concerning storage, distribution, and sale of water was negotiated during 1989 with the Last Chance Creek Water District. Delivery and distribution of water was made in accordance with the provisions of the contract and the instructions of the District's Board of Directors. Deliveries for Little Last Chance Water District started April 18, 1994 and continued until September 30. A total of 9,000 acre-feet of water was delivered. Charles D. Hand, Water Services Supervisor, performed the duties of watermaster in the District.

Smithneck Creek

The normal two-week rotation schedule for water users below Loyalton was started April 21, 1994, with sufficient water to supply first and approximately 20 percent of second priority. By August, the flow dropped to approximately 20 percent of first priority.

Webber Creek

By August, the flow in this system decreased to supply approximately 35 percent of the first-priority allotments. Importation of water from Little

Truckee River began March 31, 1994 to supplement the natural flow of Webber Creek to satisfy all allotments of the Sierra Valley Water Company shareholders (one priority). A total of 7,551 acre-foot of water was delivered through Little Truckee Ditch during the irrigation season. This diversion was closed on June 16 by order of the federal watermaster Gary Stone.

West Side Canal Group

By August, the flow in this system decreased to 100 percent of first priority and approximately 20 percent of second priority.

Fletcher Creek and Spring Creek

This system started the irrigation season with 100 percent first and approximately 50 percent of second priority. By August, the flow in this system decreased to approximately 65 percent of first priority.

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

TABLE 17

1994 Daily Mean Discharge
(In cubic feet per second)

LITTLE TRUCKEE DITCH AT HEAD

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		9.0	60	60			
2		9.0	60	60			
3		10	60	58			
4		16	60	56			
5		20	60	55			
6		20	60	52			
7		19	60	55			
8		21	60	50			
9		23	60	49			
10		21	60	48			
11		22	60	38			
12		33	60	38			
13		46	60	32			
14		53	60	10[1/]			
15		58	60				
16		60	60				
17		60	60				
18		60	60				
19		60	60				
20		60	60				
21		60	60				
22		60	60				
23		60	60				
24		60	60				
25		60	60				
26		60	60				
27		60	60				
28		60	60				
29		60	60				
30		60	60				
31	5.5[1/]		60				
MEAN		43.0	60.0	22.0			
AC-FT		2540	3690	1310			

[1/] No record before March 31 and no flow June 15 through September 30.

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

TABLE 18

1994 Daily Mean Discharge
(In cubic feet per second)

MIDDLE FORK FEATHER RIVER NEAR PORTOLA

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	272	32	48	27	12	10	9.0
2	312	31	50	25	10	10	10
3	259	32	46	23	11	9.0	11
4	215	33	32	23	11	11	11
5	196	33	23	21	10	11	10
6	237	32	24	20	10	11	10
7	335	32	31	18	9.0	11	5.0
8	338	25	39	15	10	9.0	5.0
9	244	21	53	14	10	6.0	5.0
10	192	19	53	14	10	6.0	5.0
11	180	19	50	14	9.0	6.0	5.0
12	194	19	42	14	5.0	6.0	5.0
13	204	20	42	14	4.0	6.0	5.0
14	200	20	41	13	4.0	6.0	5.0
15	169	21	37	13	4.0	5.0	6.0
16	135	21	35	12	5.0	5.0	6.0
17	117	20	34	11	5.0	5.0	6.0
18	105	17	35	12	5.0	6.0	8.0
19	97	15	37	11	5.0	6.0	11
20	86	14	37	11	6.0	6.0	6.0
21	80	14	41	11	6.0	6.0	5.0
22	74	14	41	10	6.0	7.0	6.0
23	71	14	42	9.0	6.0	10	11
24	67	14	42	10	6.0	10	11
25	63	14	41	12	6.0	10	12
26	60	14	40	13	6.0	10	12
27	54	14	39	13	7.0	10	12
28	48	14	35	12	11	10	12
29	46	15	32	12	11	10	12
30	43	35	29	12	11	10	12
31	41		28		11	10	
MEAN	153	21.3	38.7	14.6	7.8	8.2	8.3
AC-FT	9390	1260	2380	871	480	504	494

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

The North Fork Cottonwood Creek service area is in Shasta County near the town of Ono, west of Redding. The source of water for this service area is the North Fork of Cottonwood Creek and its two major tributaries, Moon Creek and Jerusalem Creek. North Fork Cottonwood Creek flows through the service area in a southeasterly direction to where it joins the other two major forks of Cottonwood Creek and then to the Sacramento River east of the town of Cottonwood. The service area consists of sparsely scattered parcels, some in hilly terrain and some in the valleys.

Basis of Service

The water rights of this creek system were determined by court reference and set forth in Decree No. 5479, Shasta County Superior Court, dated June 9, 1920. The North Fork Cottonwood Creek watermaster service area was created September 11, 1929, although service had been provided intermittently in accordance with the decree since 1924. All water rights have equal priority.

Water Supply

Snowmelt contributes to the flow in the North Fork Cottonwood Creek system during the early part of the irrigation season, and perennial springs provide the major source of supply during the summer and fall months. The flow is normally sufficient to supply all demands except in dry years, when the available supply may be as low as 20 to 40 percent of the decreed allotments. A record of the daily mean discharge of North Fork Cottonwood Creek near Igo is presented in Table 19. This gaging station is at the lower end of the creek, but gives a general indication of the water supply.

Method of Distribution

The general practice throughout the area is to irrigate by wild flooding. One water user pumps directly from the creek, using a sprinkler system to irrigate his crops. Pumping is necessary at this diversion point because the irrigated land is considerably higher than the creek channel.

1994 Distribution

Watermaster service for North Fork Cottonwood Creek began June 1 and continued through September 30 with John A. Nolan, Water Resources Engineering Associate, as watermaster.

The available water supply for the service area was well below normal. The Bee Ditch diversion dam was in such poor condition that very little was diverted into this ditch allowing for full entitlement diversions to the remaining ditches for the entire season.

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

TABLE 19

1994 Daily Mean Discharge
(In cubic feet per second)

NORTH FORK COTTONWOOD CREEK NEAR IGO

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	122	48	47	20	1.4	2.8	3.9
2	125	48	45	16	1.4	7.5	3.0
3	124	48	43	18	2.4	5.7	3.1
4	123	45	49	16	2.5	4.2	3.5
5	143	45	52	27	3.3	2.2	2.4
6	123	47	53	37	1.6	1.8	5.5
7	114	44	107	28	1.1	1.7	3.7
8	110	120	68	20	1.9	1.1	2.6
9	107	86	58	14	2.0	1.9	2.2
10	140	46	52	12	2.4	2.0	3.0
11	124	41	49	26	2.0	2.5	4.1
12	105	39	46	21	1.6	3.3	7.1
13	98	36	42	16	1.4	7.4	5.3
14	96	35	41	24	1.0	8.0	23
15	94	33	41	23	0.9	4.4	20
16	92	32	42	17	1.6	1.6	14
17	88	32	45	21	1.0	1.6	12
18	86	32	41	21	1.0	2.1	20
19	83	32	43	20	1.4	3.5	4.4
20	79	29	44	18	0.8	2.3	1.8
21	77	26	42	16	7.1	2.7	2.3
22	71	22	40	16	18	6.2	5.4
23	60	34	36	13	18	9.0	4.0
24	59	71	32	8.4	21	7.5	1.2
25	58	166	26	10	24	5.4	0.5
26	55	101	33	9.4	22	8.5	0.2
27	53	70	32	8.6	13	6.9	0.1
28	52	60	28	5.1	3.1	5.6	0.1
29	51	53	25	2.9	2.4	10	0.1
30	51	49	19	1.9	1.8	16	0.0
31	51		23		1.6	6.4	
MEAN	90.8	52.3	43.4	16.9	5.3	4.9	5.3
AC-FT	5581	3114	2666	1004	327	301	314

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

The North Fork Pit River service area lies along the west slopes of the Warner Mountains in northeastern Modoc County and extends southward from the Oregon border about 45 miles to just south of Alturas.

The North Fork Pit River flows in a southerly direction from the south rim of Goose Lake Basin to its confluence with the South Fork Pit River west of Alturas. The basins of Goose Lake and the North Fork Pit River may be considered completely separate, since the lake has not spilled into the river since 1890.

Eight small independent streams flowing in a westerly direction from the west slope of the Warner Mountains constitute the major source of water. Three of these (New Pine, Cottonwood, and Davis creeks) are tributary to Goose Lake. Five are tributary to the North Fork Pit River. From north to south, they are: Linville, Franklin, Joseph, Thoms, and Parker creeks.

The place of use in the northern half of the area is a relatively long, narrow, sloping strip of land between the east shore of Goose Lake and the foothills of the Warner Mountains. The places of use in the southern half of the area, which are supplied from the North Fork Pit River and its tributaries, are primarily in the narrow valleys bordering the streams. The elevation of the places of use range from about 4,350 feet just below Alturas to about 5,200 feet at the upper portions on some of the creeks.

Basis of Service

Table 20 briefly outlines the five decrees covering the area and presents data on the establishment of watermaster service and water rights.

Water Supply

The water supply comes mainly from snowmelt for all streams in the North Fork Pit River service area except Linville Creek, which, having a relatively small drainage area, is almost entirely spring-fed. After mid-June, the rest of the streams also depend on springs, but diminish rapidly until mid-July, after which the flow remains fairly constant. There are several small reservoirs in the area, but they are used essentially for regulatory storage. The mean daily discharge of various tributaries is presented in Tables 21 through 29.

Method of Distribution

Distribution is accomplished by diversion structures in the main channels diverting into ditches that convey the water to its place of use. Wild flooding from small feeder ditches is the common method of application. There is, however, increasing use of sprinkler systems, some directly from ditches, with

TABLE 20

DECREES AND RELATED DATA - NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Stream	Modoc County Superior Court Decree No.	Date	Type a/	Service Area Created	No. of Decree Water Right Holders	Total cfs	Remarks
New Pine	2821	6-14-32	CR	6-22-32	21	22.19	Four priorities.
Cottonwood	2344	5-03-40	CR	12-13-40	5	15.35	When water for Diversion No. 3 is insufficient to reach the area of use, it is diverted at Diversion No. 4.
Davis	2782	6-30-32	CR	7-13-32	19	68.75	Four priorities, 4-1 to 9-30. Some rights vary according to flow available. Most first & second priorities are year-round. One second priority right is for 0.40 cfs export for Roberts Creek.
					2b/		Appropriative Permit 9825 allows diversion from North Fork Davis Creek and License 10549 to divert from Davis Creek, both for the period from 10-1 to 5-1.
Franklin	3118	9-08-33	CR	9-14-33	3	11.66	Four priorities. The first priority and all second priority rights are year-round, except one which is equal to the sum of all the others (1.46 cfs) and is for the period 9-15 to 3-31 annually. Third and fourth priorities are for 4-1 to 9-30 each year.
North Fork Pit River	4074	12-14-39	S	12-18-39	10	52.08	Five priorities, 4-1 to 9-30. Pit River Dorris Reservoir water diverted through Parker Creek ditch on Parker Creek. Fourth and fifth priorities are special class.
Linville	4074	12-14-39	S	12-18-39	3	8.30	Two priorities.
Joseph	4074	12-14-39	S	12-18-39	6	11.98	Four priorities, 4-1 to 9-30. Diversions on south side of stream, with the exception of No. 26, are on net consumptive use basis.
Parker	4074	12-14-39	S	12-18-39	9	17.87	Four priorities, 4-1 to 9-30. Diversion on Dorris Reservoir shown on North Fork Pit River schedule is made at No. 122, Parker Creek Ditch.
Shields	4074	12-14-39	S	12-18-39	7	7.70	Four priorities, 4-1 to 9-30.
Thoms	4074	12-14-39	S	12-18-39	9	6.44	Three priorities, 4-1 to 9-30.
						9.40	5.0 cfs export to Cedar Creek; and 4.40 cfs export to Stony Canyon.
Gleason	4074	12-14-39	S	12-18-39	4	4.55	Five priorities.

a/ S-Statutory, CR-Court Reference.
b/ Appropriative rights, junior to the decreed rights.

supplemental ground water being added as the surface flow diminishes. Sub-irrigation by the use of large flashboard dams to raise the water level in the channel is practiced along the North Fork Pit River between Parker Creek and Alturas.

1994 Distribution

Watermaster service began in the North Fork Pit River watermaster service area on April 1 and continued through September 30, with James P. Langley, Water Resources Engineering Associate, as watermaster.

At the beginning of season, the snowpack was only 50 percent of normal but with an abundance of rain in April and May, the runoff was good through June when both rain and snow were gone. Although the old timers predicted Goose Lake to dry up, there was a little puddle left at the end of September.

New Pine Creek

The flow was 4.1 cfs (23 percent of all priorities) on April 1, increased to 25 cfs (118 percent) on May 10, and slowly decreased the rest of the season with 1.7 cfs (58 percent of first priority) at the end of the watermaster season.

Some problems with vandalism occurred during the season. The recorder house door was torn open twice, repaired once, and left unlocked with no more problems.

The annual crusade of pulling the California Ditch flashboards occurred on Sunday evening, June 26. They were replaced and wedged in tight June 27. After having a trench dug to divert water down the ditch July 1 there were no more problems the rest of the season.

The watermaster designed two automatic splits for the California Ditch users. They will be put in this winter.

Cottonwood Creek

There was 5.8 cfs in Cottonwood Creek on April 1 with no water being diverted for irrigation. The flow varied due to the rain until a peak of 18 cfs on May 9, then gradually decreased to zero flow by the end of July and stayed that way until the end of the watermaster season.

Davis Creek

The flow in Davis Creek on April 1 was 6.3 cfs (14 percent of second priority), and fluctuated until peaking (due to rain) at 36 cfs on May 11. It then gradually decreased to 3.5 cfs (9 percent of second priority) by the middle of July and stayed constant the rest of the watermaster season.

There was a concern by the watermaster of overbanking and erosion during heavy flows in May. This was caused by the need to put extra flashboards in the

weir to measure the water and still keep enough head to divert the water down the old Mill Ditch. When this problem was pointed out to the ditch users they had it cleaned. This will not be a problem next year.

A theft-proof automatic split box was designed for the owner of the Briles Reservoir water right and he will put it in this winter.

Linville Creek

Since Linville Creek is spring-fed, there was little variation in the flow during the season. The maximum flow of 3.7 cfs occurred on May 7. The flow slowly decreased to 2.3 cfs towards the end of June and stayed constant the rest of the watermaster season.

Franklin Creek

The flow in Franklin Creek on April 1 was 3.3 cfs (22 percent of third priority). The flow peaked at 7.3 cfs (64 percent of third priority) on May 20, then gradually decreased to 1.6 cfs (100 percent of second priority) by the middle of July and stayed constant the rest of the season.

Joseph Creek

The flow in Joseph Creek on April 1 was 6.8 cfs (100 percent of second priority). The flow increased to 15 cfs (100 percent of all rights) on May 10, then slowly decreased to 1.0 cfs the first part of September. After June 27, when Diversion 26 was shut off, the flow was supplemented by water released from Halls Meadow Reservoir. Some of this water was sold to a logging company for dust control during August and September.

Thoms Creek

Full priority water was available in Thoms Creek until the middle of June then slowly decreased to about .2 cfs at the end of the watermaster season.

Parker Creek

The flow in Parker Creek was sufficient to fill all priorities until the first of July when the water users shut down to hay. At the end of July when they needed water again, the creek had dropped to 2 cfs (100 percent of first priority or stockwater), and continued at 2 cfs until the end of the watermaster season.

The United States Fish and Wildlife Service requested the diversion to Dorris Reservoir be cut down to 20 cfs on April 22, because Dorris Reservoir was spilling more than they could use downstream. The diversion was shut off completely on June 14. This late date was due to the fact that a big water user downstream on the Pit River had lost his diversion dam on May 6 and could not use the water.

Shields Creek

Shields Creek had 8.8 cfs (over 100 percent of all rights) on April 1 and increased (excluding rain caused peaks) to 12 cfs the first part of May, then slowly dropped to 2.9 cfs (36 percent of second priority) the last part of August and remained constant the rest of the watermaster season.

Pine Creek near Alturas

There was 15 cfs (72 percent of first priority) in Pine Creek on April 1 and gradually increased to 48 cfs (80 percent of second priority) the middle of May. The creek slowly decreased to 11 cfs (40 percent of first priority) the end of August and decreased to 8.2 cfs by the end of the season.

North Fork Pit River

This was a very poor irrigation season. The users below the XL Ranch could only irrigate through the middle of June mostly due to the heavy rains in May. After June only the XL Ranch had enough water to irrigate.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 21

1994 Daily Mean Discharge
(In cubic feet per second)

NEW PINE CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		4.1[1/]	8.5	16	7.3	3.2	1.8
2		5.0	8.9	15	7.3	3.0	1.8
3		5.6	9.3	14	6.9	3.0	1.8
4		5.0	12	13	6.6	3.0	1.8
5		4.7	16	13	6.2	3.0	1.8
6		5.0	22	14	5.9	2.9	1.8
7		4.4	27	13	6.2	2.9	1.8
8		4.1	25	12	5.6	2.9	1.8
9		3.9	25	12	5.3	2.9	1.8
10		3.7	25	11	5.0	2.9	1.8
11		3.7	24	11	4.7	2.7	1.8
12		4.1	24	10	4.7	2.7	1.7
13		4.7	23	9.8	4.4	2.4	1.7
14		5.0	22	9.8	4.4	2.2	1.7
15		5.9	20	10	4.1	2.2	1.6
16		7.7	20	9.3	4.1	2.2	1.6
17		10	18	9.3	4.1	2.2	1.6
18		13	17	8.9	3.9	2.2	1.6
19		12	18	8.5	3.9	2.2	1.6
20		13	17	8.5	3.9	2.2	1.6
21		14	17	8.5	3.9	2.2	1.6
22		14	16	8.5	4.4	2.1	1.6
23		12	15	8.1	4.1	2.1	1.6
24		11	15	7.7	4.1	2.1	1.6
25		9.8	15	7.7	3.9	2.0	1.6
26		8.9	16	7.3	3.7	2.0	1.6
27		8.5	16	7.3	3.4	2.0	1.6
28		8.5	15	6.9	3.4	1.8	1.6
29		8.1	17	7.3	3.4	1.8	1.6
30		8.1	16	7.3	3.2	1.8	1.6
31			16		3.2	1.7	
MEAN		7.6	17.9	10.2	4.7	2.4	1.7
AC-FT		451	1102	604	288	148	100

[1/] No record before April 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 22

1994 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		5.8[1/]	3.2	5.5	0.7		
2		5.8	3.3	5.4	0.7		
3		5.8	4.2	5.4	0.6		
4		5.8	4.6	4.8	0.5		
5		5.8	5.2	4.2	0.5		
6		5.8	6.0	3.8	0.5		
7		5.8	24	3.5	0.5		
8		5.8	21	3.0	0.4		
9		5.8	18	2.7	0.3		
10		5.8	17	2.5	0.3		
11		5.8	15	2.2	0.3		
12		5.8	14	2.2	0.3		
13		5.8	14	2.1	0.2		
14		5.8	12	2.1	0.2		
15		5.8	9.9	2.0	0.2		
16		5.8	8.3	1.8	0.1		
17		5.8	6.9	1.6	0.1		
18		5.8	6.5	1.4	0.1		
19		5.8	12	1.3	0.1		
20		5.5	9.9	1.2	0.1		
21		4.8	8.3	1.1	0.1		
22		4.7	6.9	1.1	0.1		
23		4.1	6.5	1.0	0.1		
24		3.2	6.5	1.0	0.1		
25		3.1	6.5	1.0	0.1		
26		2.9	6.5	1.0	0.1		
27		2.9	6.5	0.9	0.1		
28		2.9	6.5	0.9	0.1[1/]		
29		2.9	6.5	0.9			
30		3.2	5.9	0.7			
31			5.9				
MEAN		5.0	9.3	2.3	0.2		
AC-FT		298	570	135	15		

[1/] No record before April 1 and no flow July 29 through September 30.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 23

1994 Daily Mean Discharge
(In cubic feet per second)

DAVIS CREEK BELOW DIVERSIONS NO. 1, 3, AND 21

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		6.3[1/]	7.9	17	5.2	3.6	3.3
2		7.0	7.9	13	4.9	3.6	3.4
3		9.7	10	13	4.9	3.4	3.4
4		7.6	14	10	4.9	3.7	3.4
5		6.7	21	10	4.9	3.7	3.3
6		6.7	33	14	4.9	3.6	3.3
7		6.3	31	12	4.3	3.7	3.3
8		7.3	23	11	4.1	3.7	3.3
9		7.3	33	9.3	4.1	3.6	3.3
10		6.3	33	8.6	4.1	3.5	3.2
11		6.0	36	8.6	3.8	3.5	3.2
12		6.7	31	7.9	3.8	3.6	3.3
13		6.7	26	7.0	3.3	3.4	3.4
14		7.0	22	6.7	3.3	3.4	3.3
15		7.6	20	6.7	3.8	3.4	3.2
16		8.6	21	6.7	3.5	3.4	3.1
17		9.7	23	6.3	3.5	3.4	3.1
18		9.7	22	6.3	3.8	3.3	3.1
19		11	23	6.0	3.5	3.3	3.1
20		12	29	6.0	3.5	3.3	3.2
21		12	20	6.0	3.5	3.3	3.2
22		12	18	6.0	3.5	3.3	3.2
23		10	17	6.0	3.8	3.3	3.3
24		10	18	5.7	4.1	3.2	3.3
25		9.3	18	5.7	3.8	3.2	3.3
26		8.3	18	5.4	4.1	3.2	3.2
27		7.6	17	5.4	4.3	3.2	3.2
28		7.3	18	5.2	4.6	3.1	3.2
29		7.3	16	5.2	3.3	3.4	3.2
30		8.3	16	5.2	3.3	3.3	3.2
31			17		3.4	3.2	
MEAN		8.3	21.3	8.1	4.0	3.4	3.2
AC-FT		492	1309	480	246	210	193

[1/] No record before April 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 24

1994 Daily Mean Discharge
(In cubic feet per second)

LINVILLE CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		2.8[1/]	2.6	3.0	2.3	2.3	2.3
2		2.8	2.6	2.7	2.3	2.3	2.3
3		2.8	2.6	2.7	2.3	2.3	2.3
4		2.8	2.6	2.7	2.3	2.3	2.3
5		2.7	3.4	2.7	2.3	2.3	2.3
6		2.7	3.4	2.7	2.3	2.3	2.3
7		2.7	3.7	2.7	2.3	2.3	2.3
8		2.7	3.3	2.7	2.3	2.3	2.3
9		2.6	3.1	2.7	2.3	2.3	2.3
10		2.6	3.0	2.7	2.3	2.3	2.3
11		2.6	3.0	2.7	2.3	2.3	2.3
12		2.6	3.0	2.7	2.3	2.3	2.3
13		2.6	2.9	2.6	2.3	2.3	2.3
14		2.6	2.9	2.6	2.3	2.3	2.3
15		2.6	2.9	2.6	2.3	2.3	2.3
16		2.6	2.9	2.5	2.3	2.3	2.3
17		2.6	2.9	2.5	2.3	2.3	2.3
18		2.6	2.9	2.5	2.3	2.3	2.3
19		2.6	3.4	2.5	2.3	2.3	2.3
20		2.6	3.4	2.5	2.3	2.3	2.3
21		2.6	3.3	2.5	2.3	2.3	2.3
22		2.6	3.1	2.5	2.3	2.3	2.3
23		2.6	3.0	2.3	2.3	2.3	2.3
24		2.6	3.0	2.3	2.3	2.3	2.3
25		2.6	3.0	2.3	2.3	2.3	2.3
26		2.6	3.0	2.3	2.3	2.3	2.3
27		2.6	2.9	2.3	2.3	2.3	2.3
28		2.6	2.9	2.3	2.3	2.3	2.3
29		2.6	2.8	2.3	2.3	2.3	2.3
30		2.6	2.8	2.3	2.3	2.3	2.3
31			2.8		2.3	2.3	
MEAN		2.6	3.0	2.5	2.3	2.3	2.3
AC-FT		157	185	152	141	141	137

[1/] No record before April 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 25

1994 Daily Mean Discharge
(In cubic feet per second)

FRANKLIN CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		3.3[1/]	4.6	4.2	1.8	1.6	1.8
2		3.7	4.6	3.9	1.5	1.6	1.8
3		4.2	5.1	3.7	1.5	1.6	1.9
4		3.9	5.3	3.5	1.4	1.6	1.9
5		4.2	4.6	3.5	1.4	1.6	1.9
6		4.2	5.1	3.9	1.4	1.6	1.6
7		3.9	5.5	3.7	1.4	1.8	1.8
8		3.9	6.0	3.5	1.4	1.8	1.6
9		3.9	6.5	3.3	1.4	1.6	1.8
10		3.9	7.0	2.9	1.4	1.6	1.8
11		3.7	7.0	2.9	1.4	1.6	1.8
12		3.7	6.2	2.9	1.5	1.6	1.6
13		3.7	5.5	2.9	1.4	1.6	1.9
14		3.9	5.1	2.7	1.4	1.6	1.9
15		4.2	5.3	2.5	1.4	1.6	1.9
16		4.6	5.1	2.5	1.4	1.6	1.8
17		4.6	6.0	2.5	1.4	1.6	1.8
18		4.8	5.8	2.5	1.4	1.6	1.6
19		4.6	6.7	2.5	1.5	1.6	1.6
20		5.8	7.3	2.4	1.6	1.6	1.6
21		6.0	7.3	2.3	1.6	1.6	1.6
22		6.0	7.0	2.3	1.8	1.6	1.6
23		6.0	6.0	2.2	1.8	1.6	1.6
24		5.8	6.0	2.2	1.8	1.6	1.6
25		5.8	5.8	2.2	1.8	1.6	1.6
26		5.3	5.8	2.2	1.8	1.6	1.6
27		4.8	5.5	2.0	1.6	1.6	1.8
28		4.6	5.1	2.1	1.6	1.6	1.8
29		4.6	4.8	2.1	1.6	1.8	1.8
30		4.8	4.2	2.1	1.6	1.8	1.8
31			4.2		1.6	1.8	
MEAN		4.5	5.7	2.8	1.5	1.6	1.8
AC-FT		271	349	167	94	100	107

[1/] No record before April 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 26

1994 Daily Mean Discharge
(In cubic feet per second)

JOSEPH CREEK BELOW COUCH CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		6.8[1/]	6.8	7.6	1.4	1.8	1.5
2		6.8	6.8	6.2	2.6	1.8	1.5
3		8.4	7.0	5.5	2.6	1.8	1.6
4		6.8	8.4	5.2	2.1	1.7	1.4
5		6.0	6.2	4.6	2.6	1.8	1.1
6		5.7	13	5.0	2.5	1.6	1.0
7		5.7	17	4.8	2.5	1.7	0.9
8		5.7	15	4.2	2.5	1.8	0.9
9		5.7	15	4.0	2.2	1.7	0.9
10		4.8	15	3.7	2.0	1.6	1.0
11		4.2	15	3.6	2.0	1.6	1.0
12		5.5	15	3.3	2.0	1.6	1.0
13		5.7	14	3.5	1.9	1.6	1.0
14		5.7	13	3.3	1.9	1.6	1.0
15		6.0	13	3.3	1.8	1.6	1.2
16		6.2	10	3.3	1.8	1.6	1.6
17		6.8	11	3.0	2.0	1.5	1.4
18		7.0	13	2.3	2.1	1.4	1.4
19		7.0	13	2.2	2.1	1.4	1.4
20		7.0	13	2.1	2.1	1.4	1.3
21		7.0	13	2.6	2.0	1.4	1.2
22		7.2	13	2.5	2.0	1.4	1.2
23		7.0	13	2.2	2.0	1.4	1.2
24		7.0	13	2.0	2.2	1.5	1.2
25		7.2	12	2.1	2.2	1.5	1.2
26		6.2	12	2.0	2.1	1.5	0.6
27		6.8	11	2.3	2.1	1.5	0.4
28		6.0	9.8	1.8	2.0	1.5	0.4
29		5.7	8.2	1.8	2.0	1.6	0.4
30		6.8	7.6	1.4	1.8	1.6	0.4
31			7.0		1.6	1.5	
MEAN		6.3	11.6	3.4	2.1	1.6	1.1
AC-FT		378	714	201	128	97	64

[1/] No record before April 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 27

1994 Daily Mean Discharge
(In cubic feet per second)

SHIELDS CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		8.8[1/]	8.8	7.3	4.5	3.1	2.9
2		8.8	9.1	7.0	4.5	3.1	2.9
3		8.8	9.1	7.0	4.3	3.1	2.9
4		8.8	8.3	7.0	4.3	3.1	2.9
5		8.8	11	7.0	4.3	3.1	2.9
6		8.8	14	7.0	4.3	3.0	2.8
7		8.8	16	7.0	4.3	3.0	2.8
8		8.8	13	6.7	4.3	3.0	2.8
9		8.8	12	6.7	4.1	3.0	2.8
10		8.8	12	6.7	4.1	3.0	2.8
11		8.8	11	6.4	4.1	3.0	2.8
12		8.8	11	6.4	4.1	3.0	2.8
13		8.8	9.9	6.1	3.9	3.0	2.8
14		8.8	9.7	6.1	3.9	3.0	2.7
15		8.8	9.4	6.1	3.9	3.0	2.7
16		8.8	9.1	6.1	3.9	3.0	2.7
17		8.8	8.8	5.9	3.7	3.0	2.7
18		8.8	8.6	5.9	3.7	3.0	2.6
19		8.8	8.6	5.6	3.7	3.0	2.6
20		8.8	8.6	5.6	3.7	3.0	2.6
21		8.8	8.3	5.4	3.6	3.0	2.6
22		8.6	8.3	5.1	3.6	2.9	2.5
23		8.6	8.3	4.9	3.6	2.9	2.5
24		8.6	8.3	4.9	3.6	2.9	2.5
25		8.6	8.1	4.9	3.4	2.9	2.5
26		9.7	7.8	4.9	3.4	2.9	2.3
27		9.1	7.8	4.7	3.4	2.9	2.3
28		9.1	7.8	4.7	3.4	2.9	2.3
29		8.8	7.6	4.7	3.1	2.9	2.3
30		8.8	7.6	4.5	3.1	2.9	2.3
31			7.6		3.1	2.9	
MEAN		8.8	9.5	5.9	3.8	3.0	2.7
AC-FT		525	586	354	236	183	158

[1/] No record before April 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 28

1994 Daily Mean Discharge
(In cubic feet per second)

PINE CREEK NEAR ALTURAS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	16	15	23	39	16	11	11
2	14	15	23	36	16	11	9.8
3	13	16	23	35	16	11	9.2
4	14	15	26	35	16	10	9.0
5	26	15	26	34	16	9.9	8.6
6	18	15	36	35	16	9.8	8.4
7	13	15	42	32	15	9.8	8.3
8	13	15	38	31	15	9.8	8.3
9	12	16	39	30	15	9.9	8.4
10	15	16	40	28	14	10	8.5
11	24	16	44	28	14	10	8.6
12	17	16	47	27	14	10	8.5
13	14	16	48	26	13	10	8.4
14	13	16	48	25	13	10	8.4
15	14	16	47	24	13	11	8.4
16	13	17	46	23	13	10	8.2
17	13	20	44	23	13	10	8.2
18	13	22	41	22	12	10	8.2
19	13	22	47	22	12	10	8.1
20	13	22	48	21	12	11	8.1
21	13	22	41	21	12	11	8.0
22	14	21	37	20	12	11	8.0
23	16	20	35	20	12	11	8.0
24	19	20	33	20	11	11	8.0
25	27	20	32	19	11	11	8.0
26	22	21	31	19	11	11	7.9
27	15	22	31	18	11	11	7.8
28	14	23	31	17	11	11	8.4
29	15	23	31	17	11	11	8.5
30	15	23	33	17	11	11	8.2
31	15		35		11	11	
MEAN	15.7	18.4	37.0	25.5	13.2	10.5	8.4
AC-FT	964	1093	2273	1515	809	645	508

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 29

1994 Daily Mean Discharge
(In cubic feet per second)

NORTH FORK PIT RIVER AT ALTURAS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	73	52	19	14	1.6	0.2	0.2
2	54	49	48	18	1.7	0.1	0.2
3	43	50	5.5	12	0.3	0.1	0.2
4	37	52	6.0	6.0	0.4	0.0	0.2
5	52	46	40	7.3	0.3	0.1	0.2
6	62	46	103	4.5	0.9	0.1	0.6
7	38	46	279	5.0	1.0	0.0	1.8
8	33	46	286	6.4	1.0	0.1	2.8
9	30	46	177	4.0	1.5	0.1	1.2
10	31	47	146	41	0.7	0.1	0.5
11	43	47	129	73	0.3	0.1	3.6
12	42	47	120	4.1	0.3	0.2	0.4
13	35	47	84	3.5	0.4	0.2	0.2
14	35	47	71	2.7	0.5	0.1	0.1
15	37	45	61	2.7	0.6	0.2	0.2
16	36	29	64	1.4	0.8	0.3	0.2
17	34	5.7	100	1.2	0.2	0.4	0.1
18	31	3.2	117	1.2	0.3	0.4	0.1
19	31	6.9	102	1.1	0.2	0.3	0.2
20	31	1.5	111	1.1	0.3	0.2	0.2
21	29	0.5	137	1.1	0.5	0.2	0.2
22	32	0.4	140	1.5	0.1	0.2	0.1
23	32	5.3	122	1.8	0.2	0.2	0.1
24	30	35	62	1.8	0.2	0.1	0.1
25	62	43	61	1.7	0.2	0.1	0.1
26	76	41	47	1.3	0.2	0.2	0.1
27	53	33	46	1.2	0.2	0.2	0.1
28	48	33	39	1.5	0.2	0.2	0.1
29	49	29	34	1.8	0.1	0.1	0.1
30	52	24	21	1.4	0.1	0.2	0.1
31	53		9.6		0.1	0.2	
MEAN	42.7	33.4	88.9	7.5	0.5	0.2	
	0.5						
AC-FT	2626	1990	5469	447	31	10	28

SCOTT RIVER WATERMASTER SERVICE AREA

SCOTT RIVER WATERMASTER SERVICE AREA

The Scott River service area is in western Siskiyou County and consists of five tributaries of the Scott River: French Creek, Shackleford Creek, Sniktaw Creek, Oro Fino Creek, and Wildcat Creek. Before 1980, French Creek and Shackleford Creek were separate service areas. Wildcat Creek came into service in 1981, Oro Fino in 1984, and the five tributaries to the Scott River were combined to form the Scott River watermaster service area.

Scott River Service Area 1994 Distribution

Watermaster service began in the Scott River watermaster service area on April 1 and ended on September 30 with Keithal B. Dick, Water Resources Technician II, as watermaster.

French Creek

The French Creek service area is in Scott Valley, western Siskiyou County, near the town of Etna. The major sources of water supply are French, Miners, and North Fork French creeks. French Creek flows northeast through the center of the service area. Miners Creek begins east of the headwaters of French Creek and flows in a northerly direction, joining French Creek about three miles above its confluence with Scott River. North Fork French Creek begins north of the headwaters of French Creek and flows easterly, joining French Creek 1 mile upstream from the confluence with Miners Creek.

The service area encompasses the entire agricultural area within the French Creek Basin and some additional lands along the west side of the Scott River near the town of Etna. It is about 0.5 mile wide and 5 miles long, with the main axis and drainage running from south to north. Elevations of the agricultural area range from about 3,200 feet at the south to about 2,800 feet at the confluence of French Creek and Scott River.

Basis of Service. The rights of this creek system were determined by court reference and set forth in Decree No. 14478, Siskiyou County Superior Court, dated July 1, 1958.

The French Creek watermaster service area was created on November 19, 1968, and service was started on July 1, 1969.

Water is distributed according to three schedules: North Fork French Creek, with three priorities; Miners Creek with three; and French Creek, Horse Range Creek, Paynes Lake Creek, and Duck Lake system, with seven.

These schedules are independent of each other with two exceptions: (1) Miners Creek users have the option of diverting from French Creek when water is not available from Miners Creek, and (2) maximum allowable flows are specified at given points, regardless of the source of the water.

One peculiarity of this decree is that it included two water rights that have a specified amount, which are subject to the exclusive control of the other owners of the ditch.

Water Supply. The water supply comes from snowmelt runoff, springs and seepage, and occasional summer thundershowers.

The watershed of French Creek contains about 32 square miles of heavily forested, steep mountainous terrain of the easterly slopes of the Salmon Mountains. It varies in elevation from about 7,200 feet along its west rim to about 3,200 feet at the foot of the slopes bordering French Creek Valley. Snowmelt runoff is normally sufficient to supply all demands until about the middle of July. The daily mean discharge of French Creek above North Fork French Creek is presented in Table 30.

French Creek 1994 Distribution

The season started on French Creek with all users receiving full rights. Streamflows continued above 100 percent of all priorities until June 15. By July 15, distribution was down to fourth priority users only and continued at that rate until September 30, the end of the irrigation season.

Releases were started from Smith Lake to the North Fork Ditch users on June 7.

Shackleford Creek

The Shackleford Creek service area is in western Siskiyou County near the town of Fort Jones in Scott Valley. The major sources of water for this service area are Shackleford Creek, which flows through the central part of Quartz Valley, and its tributary, Mill Creek, which rises east of the headwaters of Shackleford Creek. Evans Creek, a small tributary to Mill Creek, enters from the south.

The service area encompasses the Quartz Valley region of Scott Valley and includes the entire agricultural area within the Shackleford Creek Basin. It is about 2 miles wide by 6 miles long, with the main axis and drainage running from south to north. Elevations on the agricultural area range from about 3,100 feet at the south to about 2,650 feet at the confluence of Shackleford Creek and Scott River.

Basis of Service. The Shackleford Creek watermaster service area was created on November 6, 1950. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 13775, Siskiyou County Superior Court, dated April 3, 1950.

The allotments are defined in four separate schedules. The upper and lower Shackleford Creek groups each have seven priority classes. The upper Mill Creek group and lower Mill Creek group each have three priority classes.

The decree also includes two storage rights upstream of all diversions. This stored water is released late in the irrigation season to Shackleford Creek for use by water right holders.

SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 30

1994 Daily Mean Discharge
(In cubic feet per second)

FRENCH CREEK ABOVE NORTH FORK FRENCH CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1			19	16	5.3	3.0	
2			19	15	5.3	3.0	
3			21	15	5.6	2.8	
4			24	17	4.9	2.8	
5			32	13	4.5	2.8	
6			46	17	4.2	2.8	
7			54	17	4.0	2.6	
8		15[1/]	52	15	3.2	2.6	
9		15	51	13	3.0	2.6	
10		14	51	13	3.0	2.6	
11		14	48	12	2.8	2.6	
12		14	46	12	2.8	2.6	
13		16	37	11	2.8	2.4	
14		16	29	11	3.4	2.4	
15		16	27	10	3.6	2.2	
16		18	27	11	3.2	2.0	
17		24	23	10	3.4	2.0	
18		32	21	8.5	3.0	2.0	
19		38	21	8.8	2.6	2.0	
20		46	23	7.1	2.6	1.8	
21		44	21	7.4	2.8	1.8	
22		43	21	6.3	5.3	1.8[1/]	
23		34	21	5.8	3.8		
24		29	21	6.1	3.6		
25		26	23	5.6	3.6		
26		25	25	5.3	4.0		
27		20	25	4.9	4.0		
28		19	22	4.7	3.8		
29		19	19	4.7	3.8		
30		19	18	4.9	3.4		
31			17		3.2		
MEAN			29.2	20.3	3.7		
AC-FT			1800	611	227		

[1/] No record before April 8, and after August 22.

Water Supply. The water supply for Shackleford Creek comes from snowmelt run-off, springs and seepage, and supplemental stored water released from Campbell Lakes, near the headwaters of Shackleford Creek.

The watershed of the Shackleford Creek stream system contains about 31 square miles, located in the heavily forested, steep mountainous terrain of the north-easterly slopes of the Salmon Mountains. It varies in elevation from about 7,000 feet along its west rim to about 3,000 feet at the foot of the slopes bordering Quartz Valley. Snowmelt runoff is normally sufficient to supply all demands until the middle of July. The supply then usually decreases until the first part of August when water is released from Cliff and Campbell Lakes to maintain sufficient flow in the Shackleford Ditch.

Method of Distribution. Irrigation is accomplished primarily by wild flooding of permanent pasture and alfalfa fields. Water is distributed by ditches and laterals to the places of use. Shackleford Ditch, the largest of these ditches, has a length of about 6 miles and a capacity of about 12 cfs.

Shackleford Creek 1994 Distribution

The season started on Shackleford Creek with all users receiving full rights and continued until June 28.

Releases were started from Campbell Lake to the Shackleford Ditch on August 10. One hundred percent of all third priority allotments was available through September 30.

Sniktaw Creek

The Sniktaw Creek service area is in western Siskiyou County, 7 miles west of the town of Fort Jones in Scott Valley. It encompasses an agricultural area about 3 miles long and 1 mile wide, running from south to north. Elevations in the Sniktaw watershed range from 6,700 feet in the southwest to about 2,650 feet at the confluence of Sniktaw Creek and Scott River.

Basis of Service. The Sniktaw Creek service area was added to the Scott River watermaster service area on April 1, 1981. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 30662, Siskiyou County Superior Court, dated January 16, 1980.

The allotments are defined in the Scott River Decree, Schedule B 38, which has three priority allotments.

Water Supply. The water supply for Sniktaw Creek comes from snowmelt, springs, and seepage. Water from Shackleford Creek (Diversions 3, 17, 19, 20, and 21) supplements available water in Sniktaw Creek.

Return water from Heide's Shackleford Creek Ditch, Diversion 3, commingles with natural flow of Sniktaw Creek. After leaving the Heide property and entering Sniktaw Creek, it is allotted as set forth in Schedule B 38 (Sniktaw Creek) from Diversions 665 to 679.

Heide may use tailwater from Shackleford Creek Ditch, Diversion 3, for irrigation of 27 acres under License 10875 issued on Application 22882 for use on former Indian lands. The right may be exercised only at times that Heide is receiving water from Shackleford Creek Ditch, Diversion 3, or at times that all Sniktaw Creek allotments are being filled.

Sniktaw Creek 1994 Distribution

All priorities were filled until June 10; by July 1, the water supply had receded to 80 percent of second priority. The Heide Ditch from Shackleford Creek was turned off June 23.

Wildcat Creek

The Wildcat Creek service area is in western Siskiyou County near the town of Callahan. The major sources of water are Wildcat Creek, which flows through the service area, and foreign water imported from Sugar Creek, Jackson Creek, Grizzly Creek, and Camp Gulch.

Basis of Service. The Wildcat Creek watermaster area was started May 1, 1980. Water is distributed under a statutory adjudication that resulted in Decree No. 30662, Siskiyou County Superior Court, dated January 16, 1980. The allotments are defined in the Scott River Decree, Schedule B 10.

Method of Distribution. Irrigation is done mainly by wild flooding of permanent pasture. Water is distributed by ditches and laterals to the place of use.

Wildcat Creek 1994 Distribution

The water supply was above normal. Import water from Sugar Creek and Jackson Creek helped supply water to the Hall Ranch, and runoff from the Hall Ranch helped supply the Thamer Ranch. Recorders were installed on the Parshall flumes at points A and B, described in the decree. These two ranches both were leased and irrigated by one operator and required no regulation.

Oro Fino Creek

The Oro Fino Creek service area is in southwestern Siskiyou County near the town of Greenview. It encompasses an agricultural area about 5 miles long and 0.5 mile wide, running from south to north. Elevations along Oro Fino Creek range from 2,900 feet near the headwaters to 2,700 feet at the confluence of Oro Fino Creek and the Scott River.

Basis of Service. The Oro Fino Creek service area was added to the Scott River watermaster service area on July 1, 1984. Water is distributed under the provision of the statutory adjudication which resulted in Decree 30662, Siskiyou County Superior Court, dated January 16, 1980.

Water Supply. The water supply for Oro Fino Creek above Diversion 606 is derived from Kidder Creek. Springs feed Oro Fino Creek below Diversion 607.

Allotments are diverted from underflow by means of offset wells or sumps at Diversions 606, 606a, 611, and 612. The allotments at Diversions 607, 608, 609, 610, 613, 613a, 614, 615, and 616 may be diverted, at the option of the claimant, from surface flow or from underflow by means of offset wells or sumps or a combination of both with the provision that when surface flow in the creek (at the county road at the O. Lewis property) recedes to 3 cfs, the percentage or amount of the surface flow reaching the point of diversion of each of the following claimants shall be bypassed at the claimant's lower property line: Friden, 51 percent; O. Lewis, 96 percent; and Luckensmeyer, all flow in excess of 1.31 cfs.

The ground water table along Oro Fino Creek is recharged mainly by Kidder Creek Diversions 446 and 448 which supply surface water to the Foster and Friden lands. Kidder Creek streamflow for these diversions is mainly snowmelt runoff.

Oro Fino Creek 1994 Distribution

The water supply of Oro Fino Creek was below normal. Water supply was helped with imported water from Kidder Creek until July 1. On September 2, at Frieden's automatic split all water was turned to the main channel for stock only.

SHASTA RIVER WATERMASTER SERVICE AREA

SHASTA RIVER WATERMASTER SERVICE AREA

The Shasta River service area is in the central part of Siskiyou County. Willow Creek and Cold Creek, formerly in the Klamath River watermaster service area, were incorporated into the Shasta River watermaster service area in 1983.

The water supply comes from North Fork Sacramento River, Shasta River and its several tributaries. The upper reaches of the service area are served by two groups of tributaries. One group, comprising Boles, Beaughan, Carrick, and Jackson creeks, rises on the northwestern slopes of Mount Shasta. The other group, consisting of Dale and Eddy creeks, and Shasta River west of Interstate 5, rises on the eastern slopes of the Trinity Mountains. All these streams join the mainstem Shasta River above Lake Shastina (Dwinnell Reservoir) near the town of Weed. As the Shasta River flows northward from Lake Shastina to its confluence with the Klamath River, north of Yreka, it is joined by three major tributaries. Parks Creek, rising on the eastern slopes of the Trinity Mountains, enters from the west near the town of Gazelle. Big Springs Creek, from Big Springs Lake, enters from the east about a mile below Parks Creek. Little Shasta River, rising on the slopes of the mountainous area between Butte Valley and Shasta Valley, enters from the east near the town of Montague.

Shasta Valley is about 30 miles long and 30 miles wide. In the center of the valley are many small, cone-shaped, volcanic hillocks that divide the area into separate parts. Because of these volcanic formations, only about 141,000 acres of about 507,000 acres in the valley are irrigable. The valley floor elevation averages about 3,000 feet.

Willow Creek is in Siskiyou County, about 10 miles northeast of Montague. It is the major source of water to the service area and rises on the west slope of the 7,800-foot Willow Creek Mountain. It flows northwest through about 11 miles of rolling hills to its confluence with the Klamath River. The Willow Creek area is about 8 miles long by 1 mile wide and varies in elevation between about 2,600 and 4,000 feet.

Cold Creek is just south of Copco Lake, a hydroelectric power reservoir on the Klamath River in the extreme northern part of Siskiyou County. Yreka is 30 miles southwest of the Cold Creek stream system. Elevations within the Cold Creek watershed range from 2,900 feet to about 6,500 feet.

Basis of Service

The Shasta River watermaster service area was created on March 1, 1933. The appropriative water rights on this stream system were determined by a statutory adjudication that resulted in Decree No. 7035, Siskiyou County Superior Court, dated December 29, 1932.

The decree lists the water rights of the entire stream system by the names of the users. The rights supervised by the watermaster are broken down into eight separate schedules. These are: Shasta River above its confluence with

Big Springs Creek - 43 priorities; Boles Creek - 20 priorities; Beaughan Creek - 5 priorities; Jackson Creek - 7 priorities; Carrick Creek - 13 priorities; Parks Creek - 25 priorities; Shasta River below its confluence with Big Springs Creek and Big Springs Creek and tributaries - 29 priorities; and Little Shasta River - 7 priorities. Additional schedules include Willow Creek, Yreka Creek, and miscellaneous independent springs, gulches, and sloughs, but these are not included in the service area.

Montague Water Conservation District has appropriative rights for storage of Shasta River and Parks Creek water in Lake Shastina. By agreement with the District, five nearby downstream users receive water from storage in lieu of their decreed continuous flow allotments. The watermaster handles the reservoir releases for these users. A peculiarity of the Shasta River decree is that it defines only appropriative rights and excludes a number of riparian users on the Lower Shasta River. Holders of these riparian rights are not regulated by the watermaster.

Water Supply

The water supply for Shasta Valley comes from snowmelt runoff, ground water and related springs, and occasional summer thundershowers. In several parts of the stream system, the springs are enough to supply most allotments throughout the season. Much of the underground flow comes from the northern slopes of Mount Shasta, which rise to 14,162 feet at the south end of Shasta Valley. Although the snowpack on Mount Shasta is usually heavy, there is little surface runoff.

Parks Creek, Upper Shasta River, and Little Shasta River get much of their water from snowmelt runoff, usually enough to supply allotments until the middle of May.

Beaughan Creek, Carrick Creek, Shasta River from Boles Creek to Lake Shastina, Big Springs, and Lower Shasta River have enough runoff from springs to supply many of the allotments throughout the season.

Records of the daily mean discharge at several stream gaging stations in the Shasta River service area are in Tables 31 through 34. The daily mean storage in Lake Shastina is in Table 35.

Method of Distribution

Irrigation of permanent pasture and alfalfa lands is mainly by wild flooding. Much of the return water is recaptured and used on lower pasture lands. Sprinkling systems are used for irrigating some alfalfa and grain lands. Water is routed by diversion dams and then carried by ditch or canal to the place of use. The largest and longest canal in the area is the Edson-Foulke Yreka Ditch, which has a capacity of about 60 cfs and a length of about 14 miles. Water is also supplied to ditch systems by pumped diversions, the three largest belonging to two irrigation districts and a private water users' association. Some riparian lands are also served by pump diversions.

Many privately owned storage reservoirs are in the area. Water from these reservoirs supplements continuous-flow allotments.

Because of the large rights of Grenada and Big Springs Irrigation districts and Shasta River Water Users Association, the watermaster's close surveillance is very important, particularly in dry years. Control of releases from Montague Water Conservation District's Dwinnell Reservoir (Lake Shastina) is another responsibility of the watermaster. This includes measurement of deliveries of stored water to users just below the dam. Control of releases from Hammond Lake is also a duty of the watermaster as of 1989.

1994 Distribution

Watermaster service began April 1 in the Shasta River wastermaster service area and ended September 30 with Keithal B. Dick, Water Resources Technician II, and Lester L. Lighthall, Water Resources Technician II, as watermasters.

The water supply for the 1994 irrigation season was way below normal. All streams experienced possibly one of the driest seasons on record. Regulation was required at the first of the irrigation season and continued throughout.

Parks Creek

Flows were well below normal with all rights being filled only for a few days the first part of May. Flows decreased and third priorities were discontinued by the second week of July. Flows continued to decrease with less than 2.0 cfs by July 26.

Upper Shasta River

Regulation was required from April 1. Upper Shasta River, Dale Creek, and Eddy Creek are on the same order of priorities. The flow was enough to fill all priorities until June 15. Flow decreased to 35 percent of third and fourth priorities in July and remained near that level until the end of September. Lower priorities below the Yreka Ditch received return flow and inflow from springs after June 15.

The Hammond Reservoir Irrigation Association, owners of the Hammond Reservoir, was added to the Shasta River watermaster service area in 1988. The 348-acre-foot reservoir has storage licenses 5261 and 6531 for water diverted from the North Fork Sacramento River. The stored water is released to the Shasta River and then diverted into diversions 3, 4, 4 west, 5, 6, 7, and 19. The releases are measured at a weir located downstream from the reservoir. The reservoir filled and remained full until June 15; releases started June 20. The reservoir was drained by August 19. Diversions from North Fork Sacramento River were started on May 2, and ended June 1.

Boles Creek and Shasta River to Lake Shastina (Dwinnell Reservoir)

Boles Creek and this portion of Shasta River are operated as one stream under a long-standing oral agreement among the water right holders. The water is distributed on a correlative, equal-priority basis. Water was set to 100 percent of all rights on June 17. Flows decreased to 70 percent of rights by mid-July and remained at this level for the rest of the season.

Beaughan Creek

With close regulation of the upper users, all priorities were satisfied for the entire season. Roseburg Lumber Company used all of its rights to sprinkle its log decks.

Carrick Creek

Carrick Springs supplied enough water to satisfy all 13 priorities for the entire season with close regulation.

Little Shasta River

There was below-average snowmelt runoff this season on the Little Shasta River. The flows started at 100 percent of third priorities and increased gradually to 60 percent of fifth priority on May 11. Flows decreased to 5 percent of fourth priority on July 15 then decreased to third priority by August 10 and remained that way until the end of the season.

Dwinnell Reservoir

Storage in Dwinnell Reservoir on March 1 was 18,280 acre-feet and increased to 19,260 acre-feet by March 15. On September 30, storage was down to 940 acre-feet. By agreement with the Montague Water Conservation District, owner of Dwinnell Reservoir, water users on Shasta River below the reservoir received stored water on demand.

Deliveries to Natural Flow Water Right Owners Below Dwinnell Reservoir - 1994

Name of Water Right Holder	Allotment (in acre-feet)	Amount Delivered from Dwinnell Reservoir (in acre-feet)
Wagner, Richard W.	1,200	1,200
Flying L Ranch	198	20
Hole-in-the-Ground Ranch	596	596
Seldom Seen Ranch	924	924
Hidden Valley Ranch	464	440
	3,382	3,180

Big Springs Lake

Big Springs Irrigation District used its own wells, and no water was received from Big Springs Lake. An agreement between E. J. Louie, A. H. Newton, Jr., and Montague Water Conservation District was established during the winter of 1986. They agreed when the flows of Big Springs receded from 17.5 cfs to 10.0 cfs, Montague Water Conservation District would do the following:

- Turn off the Basey pumps until the flow of Big Springs is 17.5 cfs or pay A. H. Newton, Jr. the additional power cost to use his own pumps.
- If flows of Big Springs fall below 10.0 cfs, Montague Water Conservation District will shut off the Basey pumps until flows return to above 10.0 cfs.

There was very little pumping by the Montague District during the 1994 season due to the low output of Big Springs. The total flow of Big Springs receded to 4 cfs for parts of August and September.

Lower Shasta River

The flows in the Lower Shasta River were enough to supply all priorities until April 20. On this date, Grenada Irrigation District was reduced to 30 cfs. On July 8 Grenada Irrigation District was shut off for remainder of the season.

Willow Creek (North of Montague)

Basis of Service. Willow Creek has had a long history of litigation. The present basis of service was initiated in 1949 when the Department of Public Works, Division of Water Resources, was asked to referee a civil suit. The matter was not finalized by a decree until 1972. The issues involved were reopened in 1971, and by Decree No. 24482, dated April 28, 1972, the Siskiyou County Superior Court appointed DWR to supervise distribution of water in accordance with an earlier agreement between the users which defined their respective rights. Currently, Willow Creek is part of the Shasta River Watermaster Service Area.

There are three water users in the service area. Distribution is on a fractional basis until the flow drops to a specified amount below the upper two users. At that time, the total flow is rotated between the upper two users.

Water Supply. The main source of water for the Willow Creek stream system is from snowmelt. Runoff from the snowmelt begins late in March or early April and is usually depleted by June. Thereafter, the streamflow decreases rapidly until about July 25. From then until the rainy season begins, the flow remains at a low-flow stage sufficient to provide domestic and stock-watering purposes to the two upper users.

Method of Distribution. Both sprinkler and flood irrigation are used on Willow Creek. The upper water user has the option of using gravity diversions for either flood or sprinkler irrigation. The middle user relies entirely on runoff from the upper user's flood irrigation. The lower user in the area uses both flood and sprinkler irrigation during the early season when the supply is abundant. As the supply dwindles, the remaining water is pumped from a sump to the sprinkler system.

1994 Distribution. Snowmelt lasted until May 25. This was all the water that was available for the lower users.

Cold Creek

Basis of Service. A statutory adjudication of Cold Creek in 1978 ordered DWR to provide watermaster service at Diversions 2, 3, and 4, and at the division weir on the Silva-Lennox Ditch. Watermaster service began April 1, 1981.

Water Supply. Flow is from springs and remains fairly constant each season.

Method of Distribution. Both sprinkler and flood irrigation are used in Cold Creek service area.

1994 Distribution. The water supply of the Cold Creek stream system satisfied all requirements until July 15. Only a portion of full entitlements were satisfied thereafter. No regulation was required since the automatic split worked well.

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 31

1994 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER NEAR YREKA[1/]

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	174	120	56	49	24	17	16
2	173	51	53	61	34	17	18
3	153	49	42	56	32	15	20
4	149	43	51	28	15	14	27
5	151	38	76	22	23	13	26
6	147	35	154	21	25	13	20
7	144	40	197	21	21	12	14
8	144	58	180	23	18	12	17
9	142	59	134	18	16	14	19
10	144	45	98	31	14	15	14
11	151	48	85	22	12	14	13
12	148	41	72	19	13	12	26
13	150	30	72	27	11	15	26
14	149	27	55	20	9.6	16	28
15	151	33	47	21	15	12	31
16	152	47	57	22	14	11	27
17	157	46	59	22	16	12	30
18	155	44	53	21	15	12	28
19	152	41	50	22	14	11	29
20	147	31	74	24	16	11	31
21	144	27	87	18	15	14	31
22	137	44	101	29	16	13	35
23	135	46	88	24	16	16	32
24	129	77	87	19	16	20	46
25	123	79	86	26	14	14	43
26	118	89	49	24	13	15	35
27	119	74	53	31	12	17	45
28	118	60	53	32	12	14	53
29	109	54	54	29	15	14	66
30	118	60	51	28	16	14	54
31	134		49		19	17	
MEAN	142	51.2	78.2	27.0	16.8	14.1	30.0
AC-FT	8760	3050	4810	1610	1030	865	1790

[1/] USGS Station

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 32

1994 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER NEAR EDGEWOOD

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		29[1/]	19	44	6.3	6.6	8.5
2		28	18	31	6.8	6.2	11
3		32	16	27	7.0	7.4	12
4		28	18	25	7.2	6.3	11
5		27	31	23	7.3	6.6	10
6		28	55	28	7.8	7.6	9.0
7		24	97	25	7.4	7.5	9.0
8		24	96	20	7.6	7.3	8.5
9		25	82	16	7.6	7.3	8.8
10		24	86	15	7.7	6.5	11
11		20	82	16	6.7	6.0	12
12		15	75	16	7.0	5.9	13
13		17	61	13	6.1	6.3	13
14		17	52	11	7.1	6.2	12
15		14	52	11	7.2	6.8	11
16		13	54	9.2	7.1	7.6	12
17		21	48	9.2	7.2	8.2	12
18		20	37	8.4	7.6	7.0	11
19		30	35	8.8	7.4	7.3	9.4
20		29	44	8.4	6.7	7.7	9.2
21		28	76	9.6	6.1	8.2	8.8
22		24	68	9.0	6.6	7.2	10
23		22	44	7.2	7.7	7.1	9.8
24		23	34	8.4	7.2	7.0	9.8
25		28	31	8.4	6.6	6.9	10
26		25	39	8.2	6.9	6.5	10
27		23	40	7.8	8.9	6.4	10
28		20	39	7.2	7.7	7.0	12
29		19	36	7.1	7.9	7.5	15
30		20	31	6.6	7.5	7.7	16
31			35		7.0	8.8	
MEAN		23.2	49.4	14.8	7.2	7.1	10.8
AC-FT		1382	3037	882	442	434	644

[1/] No record before April 1.

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 33

1994 Daily Mean Discharge
(In cubic feet per second)

PARKS CREEK ABOVE EDSON-FOULKE YREKA DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1			18	14	4.3	1.9	2.6
2			18	13	4.0	1.9	2.6
3			20	11	3.7	1.9	2.6
4			28	11	3.4	1.9	2.6
5			35	11	3.4	1.9	2.6
6			56	11	3.4	1.9	2.6
7			120	10	3.1	1.9	2.6
8			100	8.8	2.9	1.9	2.6
9			87	8.5	2.5	1.9	2.6
10			74	8.2	2.5	1.9	2.6
11		7.8[1/]	65	7.7	2.5	1.9	2.6
12		11	48	7.2	2.5	1.9	2.6
13		13	38	6.6	2.3	1.9	2.6
14		15	30	7.2	2.3	1.9	2.6
15		18	30	7.9	2.3	1.9	2.6
16		23	30	7.9	2.2	1.9	2.6
17		28	30	7.9	2.2	1.9	2.6
18		35	26	7.9	2.2	1.9	2.6
19		50	26	7.6	2.0	1.9	2.6
20		56	28	7.0	2.0	2.0	2.6
21		45	50	6.4	2.0	2.0	2.6
22		40	50	6.1	2.0	2.0	2.6
23		33	38	5.8	2.0	2.0	2.6
24		26	30	5.5	2.0	2.0	2.6
25		24	28	5.5	2.0	2.0	2.6
26		20	26	5.2	1.9	2.1	2.6
27		18	24	5.2	1.9	2.2	2.6
28		18	23	4.9	1.9	2.3	2.6
29		16	21	4.9	1.9	2.4	2.8
30		18	18	4.6	1.9	2.5	2.8
31			16		1.9	2.6	
MEAN			39.7	7.8	2.5	2.0	2.6
AC-FT			2440	467	152	123	156

[1/] No record before April 11.

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 34

1994 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER AT MONTAGUE-GRENADA HIGHWAY BRIDGE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		144[1/]	51	48	34	24	20
2		55	51	48	36	23	19
3		41	38	67	38	24	19
4		36	33	38	23	19	20
5		34	41	27	22	17	22
6		41	61	22	29	17	20
7		51	137	23	23	14	23
8		64	186	23	20	17	14
9		61	193	16	16	17	16
10		51	117	26	17	12	22
11		51	100	26	16	14	22
12		64	84	17	12	14	22
13		27	71	23	12	20	23
14		13	64	27	19	12	26
15		36	43	27	19	13	24
16		41	40	24	23	13	23
17		41	43	26	23	12	23
18		38	45	26	24	14	24
19		38	43	24	23	14	26
20		26	51	27	24	23	26
21		31	84	20	26	17	27
22		43	87	27	23	24	31
23		38	100	29	23	31	34
24		55	100	22	17	24	36
25		67	103	27	16	24	40
26		77	71	31	23	26	45
27		84	67	34	24	20	45
28		67	61	34	31	19	42
29		51	61	34	27	16	45
30		43	61	36	27	20	51
31			58		25	19	
MEAN		50.3	75.6	29.3	23.0	18.5	27.7
AC-FT		2990	4650	1740	1420	1140	1650

[1/] No record before April 1.

SHASTA RIVER WATERMASTER SERVICE AREA
1994 Season

TABLE 35

LAKE SHASTINA (DWINNELL RESERVOIR)
DAILY MEAN STORAGE IN ACRE-FEET

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	11,000	11,000	11,400	13,200	15,980	18,280	18,280	14,300	13,090	8,290	2,950	1,510
2	11,000	11,000	11,400	13,310	15,980	18,280	18,000	14,190	12,980	8,110	2,750	1,480
3	11,000	11,000	11,500	13,420	16,100	18,420	17,870	14,080	12,870	7,930	2,600	1,480
4	11,000	11,000	11,500	13,530	16,100	18,560	17,870	13,970	12,760	7,750	2,520	1,550
5	11,000	11,000	11,500	13,530	16,220	18,560	17,740	13,860	12,540	7,480	2,440	1,420
6	11,000	11,000	11,600	13,640	16,220	18,700	17,610	13,860	12,430	7,300	2,400	1,390
7	11,000	11,000	11,700	13,640	16,220	18,700	17,640	13,970	12,320	7,120	2,360	1,360
8	11,000	11,000	11,800	13,640	16,220	18,840	17,350	14,080	12,100	6,850	2,360	1,330
9	11,000	11,000	12,000	13,640	16,340	18,840	17,350	14,190	12,000	6,670	2,320	1,300
10	11,000	11,000	12,100	13,640	16,340	18,840	17,220	14,300	11,900	6,490	2,320	1,270
11	11,000	11,000	12,210	13,640	16,340	18,980	17,220	14,300	11,700	6,240	2,280	1,240
12	11,000	11,000	12,540	13,640	16,340	18,980	17,090	14,420	11,600	6,160	2,240	1,210
13	11,000	11,000	12,540	13,750	16,460	18,980	16,960	14,420	11,400	5,920	2,200	1,210
14	11,000	11,000	12,560	13,750	16,700	19,120	16,700	14,420	11,300	5,760	2,170	1,180
15	11,000	11,000	12,560	13,860	16,830	19,120	16,580	14,300	11,100	5,600	2,140	1,150
16	11,000	11,000	12,760	13,860	16,960	19,120	16,460	14,300	11,000	5,390	2,110	1,120
17	11,000	11,000	12,760	13,970	17,090	19,120	16,340	14,190	10,800	5,180	2,080	1,060
18	11,000	11,000	12,870	13,970	17,220	19,260	16,100	14,080	10,600	5,110	1,990	1,030
19	11,000	11,000	12,870	13,970	17,480	19,260	15,980	14,080	10,400	4,970	1,960	1,030
20	11,000	11,000	12,870	13,970	17,610	19,260	15,740	13,970	10,300	4,780	1,930	1,000
21	11,000	11,000	12,980	14,080	17,740	19,260	15,620	13,970	10,100	4,660	1,900	1,000
22	11,000	11,000	12,980	14,080	17,870	19,260	15,500	13,970	9,900	4,480	1,870	1,000
23	11,000	11,000	13,090	14,190	17,870	19,260	15,380	14,080	9,800	4,360	1,840	1,000
24	11,000	11,000	13,090	15,020	17,870	19,120	15,140	13,970	9,700	4,180	1,810	980
25	11,000	NR	13,090	15,380	18,000	18,980	15,020	13,860	9,400	4,000	1,780	980
26	11,000	NR	13,200	15,500	18,000	18,980	14,780	13,750	9,300	3,880	1,750	960
27	11,000	NR	13,200	15,620	18,140	18,840	14,540	13,530	9,010	3,700	1,720	960
28	11,000	NR	13,200	15,740	18,280	18,840	14,660	13,530	8,830	3,580	1,690	940
29	11,000	NR	13,200	15,740	18,280	18,700	14,540	13,420	8,650	3,400	1,660	940
30	11,000	NR	13,200	15,860		18,420	14,420	13,310	8,470	3,220	1,630	940
31	11,000		13,200	15,860		18,420		13,200		3,150	1,600	

NR - No record.

SURPRISE VALLEY WATERMASTER SERVICE AREA

SURPRISE VALLEY WATERMASTER SERVICE AREA

The Surprise Valley service area is in Modoc County, east of the Warner Mountains. Eleven individual stream systems rising on the eastern slope of the Warner Mountains supply water to the area. These are fed by snowmelt runoff and run in fast, steep courses down the eastern slope of the Warner Mountains to the valley floor where numerous scattered diversion ditches convey water to the irrigated lands.

Basis of Service

The Surprise Valley watermaster service area was created January 10, 1939 and includes Mill, Soldier, Pine, Cedar, Deep, Owl, Rader, and Emerson creeks, all of which once had individual watermaster service. Also, service was started on Eagle Creek at that time. Bidwell Creek was added to the service area March 16, 1960, and Cottonwood Creek was added in 1977. Each of the 11 stream systems in Surprise Valley is under separate decrees.

See Table 36, page 89, for specific data regarding the decrees and water rights on the individual creeks.

Water Supply

The water supply comes almost entirely from snowmelt, with only minor spring-fed flows occurring late in the season. Due to the steep eastern slope of the Warner Mountains, there are no likely storage sites on the service-area streams. Because of the lack of such regulatory storage, the available water supply at any specific diversion point may vary considerably within a few hours. Wide daily temperature changes cause great changes in the rate of snowmelt runoff. This situation is worsened by the relatively short, steep drainage area. Also, occasional summer thundershowers may cause a creek to discharge a flow of mammoth proportions for several hours. These flashes can cause considerable damage from washouts and debris deposition but are of such short duration that little or no beneficial use can be made of the water.

Records of the daily mean discharge at several stream gaging stations within the service area are presented in Tables 37 through 48, pages 90 through 101.

Method of Distribution

Continuous-flow distribution is used on most creeks, but water is rotated among some users in accordance with either decree schedule or by mutual agreement.

Alfalfa and meadow hay, the major crops in the valley, are irrigated by sprinklers and wild flooding, although some lands depend upon subsurface irrigation. A few of these systems work by gravity, but most use pumps with the surface water supplemented by deep wells. Many additional acres have been put into production during the past few years through the use of deep wells. Only surface water supplies are under State watermaster service.

To facilitate distribution of irrigation water, construction of permanent diversion dams, headgates, and measuring devices has been encouraged in recent years. Although these structures do not solve the problems of discharge variation and debris deposition, they do help a lot to solve water measurement and distribution problems.

1994 Distribution

Watermaster service began in the Surprise Valley watermaster service area on March 19 and continued until September 30. George Fitzmorris, Assistant Engineer, Water Resources, was watermaster.

The 1994 season was very dry. The snowpack and resulting spring runoff were only about one-third of normal. Most streams had reached their peak flow by mid-May and then declined rapidly. Rain during early May caused some increase in streamflows. During September, cooler weather and then rain near the end of the month resulted in some increase in streamflows.

Lower and Middle Alkali Lakes were very low at the start of the irrigation season and became completely dry by the beginning of summer. Upper Alkali Lake was full to the vegetation line at the beginning of this season, due to carryover from the 1993 wet year. However, the lake became completely dry by mid-August of this year.

Bidwell Creek

The peak flow in Bidwell Creek this season was 40 cfs, declining to 1.2 cfs in mid-September, and then rising gradually to 2.0 cfs on September 30. The maximum flow was only about one-half of first priority. Only 10 percent of the March 15-July 9 first priority was available on July 9. About 60 percent of the July 10-September 30 first priority was available on July 10, declining to 25 percent at the beginning of August.

Mill Creek

The maximum flow in Mill Creek this year was 24 cfs, lowering to 0.6 cfs in mid-September, and rising to 1.0 cfs on September 30. Full-priority water was never available this season. The flow was above one-half of third priority only for a few days in early to mid-May. The flow lowered to second priority at the end of June, to first priority during the second week of July, and to 40 percent of first priority by mid-August.

Soldier Creek

The peak flow in Soldier Creek this season was 26 cfs, lowering to 0.3 cfs in mid-September and rising to 0.7 cfs near the end of September. Full-priority water was only available for a few days in April and for a few days in May. Creek flow was down to second priority by May 21 and to first priority by June 13. Flow at the end of the rotation period on June 19 was 1.8 cfs, 80 percent of first priority. Creek flow was 20 percent of first priority in mid-September.

Pine Creek

The maximum flow in Pine Creek this year was 10 cfs. The creek went dry in early August. Only one rotation was completed before the creek flow declined to 4 cfs on April 26 and was directed to tracts 68 and 70 on the North Channel. On May 25 the flow had lowered to 1.6 cfs and was diverted to the Cressler Ditch.

Cedar Creek

The peak flow in Cedar Creek this season was 9.5 cfs. The creek became dry in mid-August. With cooler weather, flow resumed in mid-September and was 0.2 cfs on September 30. A maximum flow of about one cfs was diverted from Thoms Creek during May until Thoms Creek became so low that further diversion was not practicable. Cedar Creek flow lowered to 3.6 cfs on June 1 and was diverted to Tract 91, the only first-priority user.

Deep Creek

The maximum flow in North Deep Creek this season was 7.4 cfs, decreasing to 0.1 cfs in late July, leveling off, and then increasing to 0.3 cfs in late September. Full priority water was never available this year. The flow declined to 20 percent of full priority at the start of June and to 5 percent of full priority at the beginning of July.

The peak flow in South deep Creek this year was 15 cfs, declining to 0.2 cfs at the beginning of August, leveling off, and then rising to 0.6 cfs at the end of September. Third-priority water was available in April and early May, declining to first priority in mid-May, and to 15 percent of first priority at the end of June.

Cottonwood Creek

The maximum flow in Cottonwood Creek this season was 35 cfs, declining to 1.0 cfs in mid-August, and then remaining fairly constant for the remainder of the year, being 1.1 cfs on September 30. Water rotation between Tracts 243, 245, 246, and 109 started on May 6 and was completed with a double rotation on June 30.

Owl Creek

The peak flow in Owl Creek this year was 39 cfs, lowering to 1.2 cfs at the end of July. The flow remained fairly level through most of August and then declined again to 0.8 cfs at the end of August. The flow then remained constant during most of September, rising to 0.9 cfs on September 30. The Allen-Arreche (Snake) Ditch was never in service this season. The creek flow was above 29 cfs for only a short period during May. Peak flows in the creek carried sand, gravel, and debris that the water right holders were concerned would fill their ditch. The flow this season did not reach the full 21 water right priorities. The flow declined to eleventh priority at the end of May, to the seventh priority at the end of June, and to third priority near the end of July.

Rader Creek

The maximum flow in Rader Creek this season was 20 cfs, dropping to 0.4 cfs in mid-August. The flow then remained fairly level until near the end of September when it increased to 0.9 cfs. Water was diverted into the Cockrell Ditch from May 20 until the ditch flow no longer reached the place of use on June 10. Full priority water was not available in the creek this year. Fifth-priority water was only available for a few days in mid-May. The flow dropped to third priority on May 17, second priority in mid-July, and first priority on July 20. The flow further declined to one-third of first priority by mid-August.

Eagle Creek

The peak flow in Eagle Creek this year was 31 cfs lowering to 1.0 cfs at the start of August, and then remaining fairly level for the rest of the season, being 1.0 cfs on September 30. Full fourth-priority water was only available for a few days in May. The flow declined to third priority in mid-June, to second priority at the end of June, and to first priority by mid-July. The creek flow was 40 percent of first priority at the end of September.

Emerson Creek

The maximum flow in Emerson Creek this season was 12 cfs, declining to 0.8 cfs in early August, remaining fairly level until mid-August, then rising some, being 1.4 cfs on September 30. Full-priority water was not available this year. Only a portion of full priority was available, lowering to first priority at the end of June, and to 50 percent of first priority at the end of July.

TABLE 36

DECREES AND RELATED DATA - SURPRISE VALLEY STREAMS

Stream	Modoc County Superior Court Decree No.	Date	Type[a]	Service Area Created	No. of Water Right Owners	Total Cfs	Remarks
Bidwell	6420	1-13-60	S	3-16-60[b]	46	63.74	(Schedule 3) 3 priorities March 15-July 9. (Schedule 4) 5 priorities July 10-September 30. If no water passing version No. 23 September 30-March 14, 1st priority provisions of Schedule 4 apply
Mill	3024	12-19-31	CR	12-30-31	38	37.13	One priority on Brown Creek, tributary to Rutherford Creek, 7 priorities on Rutherford Creek, tributary to Mill Creek, 1st and 2nd for year-round use, 3rd and 4th April through September.
Soldier	2045	11-28-28	CR	9-11-29	13 4[c]	33.50 4.37	Starting March 19 each year, lower users receive water for 4 13-day periods alternating with upper users who receive water for 4 10-day periods, ending June 19. 7 priorities during lower users periods, 8 during upper users periods and 12 for rest of the year. Appropriative License 1566, 1613, 1648, and 1850.
Pine near Cedarville	3391	12-07-36	CR	1-13-37	5 1[c]	d/ 0.08	One full rotation totalling 693 AF. Rotation continues until flow decreases to 4 cfs, then all water goes to Cal-Vada Ranch until flow decreases to 1.60 cfs, then all water goes to the R. Bordwell Ranch.
Cedar	1206 2343 d/	5-22-01 2-15-23	CA CA	6-19-26	12	28.90[d]	Water rights established by these two decrees and an agreement signed by all users. No. 1206 set 1st and 2nd priorities; No. 2443 3rd priority and agreement the 4th. 28.90 cfs includes 5.00 cfs imported from Thoms Creek on west slope of Warner Mountains.
Deep	3101	1-25-34	CR	12-29-34	11	29.37	Schedule 2 establishes 5 priorities, year-round.
Cottonwood	6903	12-01-64	CA	7-01-77[b]	8	d/	Water rights based on a percentage of flow in an equal priority.
Owl	2410	4-29-29	CA	9-11-29	8	41.70	21 priorities; all year round but 8th priority, under which each of 3 owners receives his allotment for an 8-day period. Appropriative License No.2842, 3.54 cfs.
Rader	3626	6-04-37	CR	6-12-37	6	21.00	7 priorities. 7th is for surplus water. Diversions No. 1, 3, 6, and 7 have seasonal limitations.
Eagle	2304 3284	4-05-26 11-05-37	CA CR	1-10-39	36	30.57	Decree No. 3284 added rights in all priority classes, and established 4 classes. 4.50 cfs right of White Pine Lumber Co. is for use March 1 to July 1. Eagleville 'town users', Schedule 2 may divert through Gee & Grider ditches March 15 to October 15 each year. Set 1st priority rights of Gee & Grider ditches, Par. XVII & XVIII, for use April 15 to October 1.
Emerson	2840	3-25-30	CR	4-11-30	10	24.65	4 priorities, 1st is for year-round use, others April 1 to September 30.

a/ S-Statutory, CR-Court Reference, CA-Court Adjudication, A-Agreement
b/ Added to existing Surprise Valley service area.
c/ Appropriative rights junior to the decreed rights.
d/ See remarks.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 37

1994 Daily Mean Discharge
(In cubic feet per second)

BIDWELL CREEK NEAR FORT BIDWELL

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	6.0	11	14	19	5.4	2.4	1.7
2	7.6	11	15	16	5.3	2.0	1.7
3	8.6	13	16	15	5.2	2.1	1.8
4	9.4	12	21	14	5.0	2.1	1.8
5	9.4	12	22	13	4.9	2.1	1.7
6	8.2	12	32	14	4.8	2.1	1.4
7	7.6	11	40	13	4.6	2.0	1.3
8	7.5	10	37	12	4.3	2.0	1.4
9	7.9	9.8	36	11	4.1	1.9	1.7
10	8.7	9.4	37	11	4.2	1.8	1.8
11	8.5	9.5	38	9.9	4.0	1.7	2.0
12	8.2	10	37	9.8	3.9	1.6	2.1
13	8.3	11	36	9.8	3.8	1.6	2.0
14	9.1	12	33	9.7	3.7	1.6	1.9
15	10	14	32	9.5	3.5	1.7	1.8
16	11	17	29	9.3	3.4	1.7	1.6
17	10	20	28	9.0	3.3	1.7	1.4
18	9.5	24	25	8.7	3.1	1.6	1.3
19	9.0	26	25	8.2	3.0	1.6	1.3
20	8.4	25	25	7.8	2.8	1.6	1.3
21	8.3	24	24	7.6	2.6	1.8	1.3
22	8.1	23	23	7.3	3.5	1.8	1.2
23	7.9	20	22	7.1	3.9	1.7	1.3
24	7.6	18	21	7.0	3.2	1.6	1.2
25	7.5	17	22	6.7	2.9	1.6	1.2
26	7.4	16	22	6.6	2.7	1.7	1.2
27	7.9	14	22	6.5	2.6	1.8	1.8
28	8.4	13	21	6.2	2.5	1.7	1.7
29	10	13	19	5.8	2.5	1.7	2.2
30	11	15	18	5.5	2.4	1.8	2.0
31	11		18		2.3	1.6	
MEAN	8.7	15.1	26.1	9.9	3.7	1.8	1.6
AC-FT	533	898	1607	587	225	110	94

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 38

1994 Daily Mean Discharge
(In cubic feet per second)

MILL CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		7.9[1/]	8.9	10	2.3	1.0	0.6
2		7.5	9.3	9.7	2.3	1.0	0.7
3		7.2	11	9.3	2.1	1.0	0.7
4		6.9	13	8.5	2.1	1.0	0.8
5		6.9	14	8.2	2.3	1.0	0.7
6		6.9	18	8.9	2.1	1.0	0.7
7		6.6	24	8.5	2.0	1.0	0.7
8		6.0	20	7.9	2.0	1.0	0.7
9		6.3	19	7.2	1.8	0.9	0.7
10		6.0	18	7.5	1.8	0.9	0.8
11		6.3	18	6.9	1.7	0.9	0.8
12		6.9	16	6.3	1.7	0.9	0.8
13		7.5	14	6.0	1.6	0.8	0.8
14		8.5	12	5.7	1.5	0.8	0.8
15		9.7	13	5.7	1.4	0.8	0.8
16		10	13	5.2	1.3	0.8	0.7
17		12	13	4.9	1.3	0.8	0.7
18		15	13	4.6	1.4	0.8	0.7
19		19	15	4.4	1.3	0.8	0.7
20		16	18	4.2	1.2	0.8	0.6
21		14	16	3.9	1.2	0.8	0.6
22		12	15	3.7	1.5	0.7	0.6
23		11	14	3.5	1.6	0.8	0.6
24		10	13	3.4	1.5	0.8	0.6
25		9.7	12	3.3	1.4	0.7	0.7
26		8.9	11	2.9	1.4	0.7	0.7
27		8.5	11	2.7	1.2	0.7	0.7
28		8.2	10	2.3	1.1	0.7	0.8
29		7.9	10	2.1	1.1	0.7	0.9
30		8.5	10	2.1	1.0	0.7	1.0
31			9.7		1.0	0.6	
MEAN		9.3	13.9	5.7	1.6	0.8	0.7
AC-FT		551	857	337	98	51	43

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 39

1994 Daily Mean Discharge
(In cubic feet per second)

SOLDIER CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		7.0	8.2	6.2	1.5	0.7	0.4
2		4.8	8.0	5.2	1.3	0.6	0.3
3		3.7	10	4.2	1.2	0.5	0.4
4		4.4	13	3.5	1.5	0.5	0.4
5		5.9	15	3.0	1.1	0.6	0.3
6		6.6	23	3.7	1.2	0.7	0.3
7		6.2	21	3.2	1.0	0.7	0.4
8		5.8	17	2.9	0.9	0.6	0.3
9		5.8	15	2.6	0.9	0.5	0.4
10		5.5	13	2.4	0.8	0.5	0.5
11		6.6	13	2.3	0.7	0.6	0.4
12		10	11	2.2	0.8	0.5	0.4
13		13	8.8	2.1	0.9	0.4	0.4
14		14	7.0	2.0	0.8	0.5	0.3
15		14	6.8	1.9	0.9	0.6	0.3
16		17	7.2	1.8	0.8	0.5	0.4
17		22	11	1.8	0.7	0.4	0.4
18		25	6.6	1.9	0.6	0.5	0.4
19	3.8[1/]	26	10	1.8	0.7	0.5	0.3
20	3.5	21	13	1.6	0.7	0.6	0.3
21	3.7	18	9.3	1.5	0.6	0.5	0.4
22	4.0	14	8.0	1.3	0.7	0.4	0.4
23	4.4	12	6.8	1.3	0.8	0.5	0.3
24	4.2	9.1	5.8	1.2	0.7	0.5	0.4
25	4.5	7.5	5.0	1.3	0.6	0.5	0.5
26	5.2	6.8	5.4	1.2	0.5	0.6	0.5
27	5.9	6.2	6.0	1.2	0.4	0.5	0.6
28	7.2	5.8	7.7	1.3	0.4	0.4	0.6
29	9.0	6.6	7.9	1.5	0.5	0.5	0.7
30	10	8.5	7.3	1.6	0.6	0.5	0.5
31	8.4		7.2		0.7	0.4	
MEAN	5.7	10.6	10.1	2.3	0.8	0.5	0.4
AC-FT	146	633	623	138	51	32	24

[1/] No record before March 19.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 40

1994 Daily Mean Discharge
(In cubic feet per second)

PINE CREEK NEAR CEDARVILLE AT THE DIVISION OF THE NORTH AND SOUTH CHANNELS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		6.4	3.6	1.5	0.4	0.1	
2		7.5	3.1	1.5	0.4	0.1	
3		9.7	2.8	1.5	0.3	0.1	
4		10	3.4	1.5	0.3	0.1	
5		7.3	3.3	1.5	0.3	0.1	
6		6.6	6.3	1.5	0.3	0.1	
7		6.0	9.2	1.4	0.3	0.1	
8		5.9	5.7	1.4	0.3	0.1	
9		6.2	4.7	1.4	0.3	0.1	
10		5.5	4.1	1.3	0.3	0.1	
11		5.6	3.6	1.3	0.3	0.0[1/]	
12		6.0	3.2	1.3	0.2		
13		7.0	2.7	1.3	0.2		
14		7.1	2.3	1.2	0.2		
15		7.1	2.2	1.2	0.2		
16		7.3	2.2	1.2	0.2		
17		8.0	2.3	1.2	0.2		
18		7.8	2.2	1.1	0.2		
19		7.5	2.0	1.0	0.2		
20	3.1[1/]	7.0	4.1	0.9	0.2		
21	3.1	4.3	2.8	0.8	0.2		
22	3.2	5.0	2.2	0.7	0.1		
23	3.2	4.7	2.0	0.7	0.1		
24	3.1	4.3	1.8	0.6	0.1		
25	2.7	4.2	1.6	0.6	0.1		
26	3.2	4.0	1.4	0.6	0.1		
27	3.2	3.9	1.4	0.5	0.1		
28	3.9	3.6	1.4	0.5	0.1		
29	6.9	3.2	1.4	0.5	0.1		
30	7.8	3.4	1.4	0.4	0.1		
31	8.3		1.4		0.1		
MEAN	4.3	6.1	3.0	0.8	0.2		
AC-FT	103	361	182	46	13		

[1/] No record before March 20 and no flow after August 10.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 41

1994 Daily Mean Discharge
(In cubic feet per second)

CEDAR CREEK AT CEDARVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	3.0	5.9	4.8	3.6	0.7	0.2	
2	3.6	6.0	4.7	3.0	0.6	0.2	
3	3.7	6.9	4.8	2.7	0.6	0.2	
4	4.4	6.3	5.6	2.5	0.6	0.2	
5	5.4	6.1	7.5	2.4	0.6	0.1	
6	4.4	6.4	9.5	2.8	0.6	0.2	
7	3.9	6.3	8.7	2.5	0.6	0.1	
8	3.7	6.2	7.2	2.3	0.5	0.1	
9	3.7	6.6	7.1	2.1	0.5	0.1	
10	4.4	6.5	6.8	1.8	0.5	0.1[1/]	
11	4.3	6.2	6.4	1.7	0.5		
12	3.9	6.4	5.9	1.6	0.4		
13	4.0	6.5	5.4	1.5	0.4		
14	4.7	6.5	5.2	1.6	0.4		
15	5.3	6.7	5.1	1.5	0.4		
16	5.3	6.9	5.5	1.5	0.4		
17	4.8	7.1	6.8	1.4	0.3		
18	4.5	7.3	6.2	1.3	0.3		
19	4.2	7.4	7.2	1.2	0.3		
20	3.8	6.8	7.4	1.1	0.3		
21	3.8	6.5	6.7	1.0	0.3		
22	3.9	6.6	5.9	0.9	0.5		
23	3.7	6.1	5.2	0.9	0.5		
24	3.7	6.1	4.9	0.8	0.5		
25	3.8	5.8	4.5	0.8	0.4		
26	3.8	5.5	4.3	0.8	0.3		
27	3.9	5.6	4.1	0.7	0.3		
28	4.5	5.3	3.9	0.7	0.3		
29	5.3	4.9	3.7	0.8	0.3		
30	6.1	5.1	3.5	0.7	0.3		
31	6.1		3.2		0.2		
MEAN	4.3	6.3	5.7	1.6	0.4		
AC-FT	265	374	352	96	27		

[1/] No record after August 10.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 42

1994 Daily Mean Discharge
(In cubic feet per second)

NORTH DEEP CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		2.3[1/]	2.9	1.9	0.5	0.1	0.2
2		2.9	3.4	1.8	0.4	0.1	0.2
3		5.5	4.1	1.8	0.4	0.1	0.2
4		3.9	4.8	1.6	0.4	0.1	0.2
5		3.6	5.6	1.6	0.4	0.1	0.1
6		5.0	6.3	1.5	0.4	0.1	0.1
7		5.0	7.0	1.5	0.4	0.1	0.1
8		5.6	6.7	1.4	0.4	0.1	0.1
9		5.0	6.3	1.4	0.3	0.1	0.1
10		4.8	5.9	1.3	0.3	0.1	0.1
11		3.9	5.6	1.3	0.3	0.1	0.2
12		3.6	5.2	1.2	0.3	0.1	0.2
13		3.2	5.0	1.2	0.3	0.1	0.2
14		4.2	4.8	1.0	0.3	0.1	0.2
15		4.6	4.6	1.2	0.3	0.1	0.3
16		5.6	4.4	1.2	0.3	0.1	0.2
17		6.5	4.2	1.0	0.2	0.1	0.2
18		7.4	3.9	1.0	0.2	0.1	0.2
19		7.0	3.6	0.9	0.2	0.1	0.2
20		6.1	3.4	0.8	0.2	0.1	0.2
21		4.6	3.2	0.8	0.2	0.1	0.2
22		3.2	2.9	0.7	0.2	0.1	0.2
23		3.1	2.8	0.6	0.2	0.1	0.2
24		2.9	2.8	0.6	0.2	0.1	0.2
25		2.9	2.6	0.6	0.2	0.1	0.2
26		2.8	2.6	0.6	0.1	0.2	0.2
27		2.8	2.5	0.5	0.1	0.2	0.2
28		2.6	2.5	0.4	0.1	0.2	0.3
29		2.5	2.3	0.4	0.1	0.2	0.3
30		2.6	2.2	0.5	0.1	0.2	0.3
31			2.0		0.1	0.2	
MEAN		4.2	4.1	1.1	0.3	0.1	0.2
AC-FT		250	250	64	16	7	12

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 43

1994 Daily Mean Discharge
(In cubic feet per second)

SOUTH DEEP CREEK BELOW DIVERSION NO. 2

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		4.8[1/]	2.8	4.5	0.8	0.2	0.2
2		5.8	2.6	3.5	0.7	0.2	0.2
3		11	2.8	3.1	0.8	0.2	0.2
4		7.9	3.3	2.9	0.7	0.2	0.2
5		7.2	3.6	2.8	0.7	0.2	0.2
6		9.7	7.9	3.3	0.6	0.2	0.2
7		10	11	2.9	0.6	0.2	0.3
8		11	11	2.5	0.6	0.3	0.3
9		10	10	2.3	0.5	0.3	0.3
10		9.7	9.1	2.0	0.5	0.2	0.3
11		7.9	7.2	2.0	0.4	0.2	0.4
12		9.1	6.5	1.9	0.4	0.3	0.4
13		10	5.3	1.9	0.4	0.3	0.4
14		8.5	4.8	2.1	0.4	0.2	0.4
15		9.1	4.8	2.0	0.4	0.3	0.4
16		11	4.5	2.1	0.3	0.3	0.4
17		13	5.1	2.0	0.3	0.3	0.4
18		15	4.3	1.9	0.3	0.3	0.4
19		14	6.1	1.8	0.3	0.3	0.4
20		12	5.8	1.7	0.3	0.2	0.4
21		9.1	5.1	1.6	0.3	0.2	0.4
22		6.5	4.5	1.5	0.4	0.2	0.4
23		4.8	4.0	1.4	0.5	0.2	0.4
24		4.3	3.6	1.3	0.4	0.3	0.4
25		3.8	3.5	1.2	0.3	0.3	0.4
26		3.5	3.3	1.1	0.3	0.2	0.4
27		3.3	3.1	1.0	0.3	0.2	0.4
28		2.9	2.9	0.9	0.3	0.3	0.5
29		2.8	2.9	0.9	0.3	0.3	0.6
30		2.9	2.8	0.8	0.2	0.2	0.6
31			2.6		0.2	0.2	
MEAN		8.0	5.1	2.0	0.4	0.2	0.4
AC-FT		478	311	121	27	15	22

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER AREA

TABLE 44

1994 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK FLUME BELOW PAGE DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		7.0[1/]	9.6	28	4.0	1.2	1.0
2		7.0	11	26	3.8	1.2	1.0
3		6.7	15	24	3.8	1.2	1.0
4		6.4	19	22	3.6	1.3	1.0
5		6.7	22	20	3.6	1.2	1.0
6		6.4	25	18	3.5	1.1	0.9
7		6.1	28	16	3.1	1.1	0.8
8		5.5	32	14	3.1	1.1	0.8
9		5.8	35	12	2.9	1.1	0.9
10		6.1	34	11	2.8	1.0	1.0
11		6.4	33	11	2.6	1.1	1.0
12		6.7	34	13	2.5	1.0	1.0
13		6.4	35	15	2.3	1.0	1.0
14		6.7	34	14	2.2	1.0	1.0
15		7.0	33	13	2.2	1.0	1.0
16		7.3	33	12	2.1	1.0	1.0
17		7.0	32	11	2.0	1.0	1.0
18		6.7	33	11	2.0	1.0	1.0
19		6.4	32	9.6	1.8	1.0	1.0
20		6.1	31	8.8	1.8	1.0	0.9
21		6.4	28	8.0	1.7	1.0	1.0
22		6.7	27	7.0	1.7	1.0	0.9
23		6.7	26	6.1	1.8	1.0	0.9
24		6.4	25	5.5	1.7	1.0	1.0
25		6.7	27	4.9	1.5	1.0	0.9
26		7.0	26	4.5	1.4	1.0	0.9
27		7.3	27	4.3	1.4	1.0	1.0
28		7.6	24	4.0	1.3	0.9	1.0
29		8.0	27	4.3	1.4	1.0	1.1
30		8.8	25	4.0	1.3	1.0	1.1
31			26		1.3	0.9	
MEAN		6.7	27.4	12.1	2.3	1.0	1.0
AC-FT		401	1680	718	143	64	60

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 45

1994 Daily Mean Discharge
(In cubic feet per second)

OWL CREEK BELOW ALLEN-ARRECHE DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		9.1[1/]	12	14	3.2	1.2	0.8
2		9.1	13	15	3.6	1.2	0.8
3		8.1	15	14	3.2	1.2	0.8
4		6.8	19	15	2.9	1.4	0.8
5		8.1	24	17	2.6	1.2	0.8
6		9.1	28	15	2.6	1.1	0.7
7		11	32	14	2.4	1.2	0.7
8		14	34	13	2.4	1.2	0.7
9		11	39	13	2.2	1.4	0.7
10		12	37	12	2.2	1.2	0.7
11		14	36	12	1.9	1.2	0.8
12		13	34	11	1.9	1.1	0.8
13		9.1	33	9.1	1.7	1.2	0.8
14		11	32	8.1	1.9	1.2	0.8
15		12	33	6.8	2.2	1.1	0.8
16		12	30	8.1	2.4	1.1	0.8
17		13	32	9.1	2.2	1.1	0.8
18		12	30	8.1	1.9	1.1	0.8
19		11	29	6.8	2.2	1.1	0.8
20		12	28	6.8	1.9	1.1	0.8
21		12	26	5.6	1.9	1.2	0.8
22		13	23	5.0	1.7	1.2	0.8
23		12	20	5.6	1.5	1.1	0.8
24		12	19	6.8	1.4	1.0	0.7
25		11	18	8.1	1.2	0.9	0.7
26		9.1	17	5.6	1.4	0.9	0.7
27		9.1	14	5.0	1.4	0.9	0.7
28		8.1	12	4.4	1.4	0.8	0.8
29		9.1	11	4.0	1.4	0.8	0.9
30		11	12	3.6	1.2	0.8	0.9
31			13		1.2	0.8	
MEAN		10.8	24.4	9.4	2.0	1.1	0.8
AC-FT		643	1500	559	125	67	46

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 46

1994 Daily Mean Discharge
(In cubic feet per second)

RADER CREEK BELOW COCKRELL DIVERSION

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		2.8[1/]	4.8	12	2.8	0.9	0.4
2		2.8	5.0	12	3.0	0.9	0.4
3		3.0	5.4	12	2.8	0.9	0.5
4		3.0	6.8	11	2.6	1.0	0.7
5		3.3	7.8	11	2.6	0.9	0.5
6		3.3	10	11	2.4	0.9	0.5
7		3.5	12	10	2.2	0.7	0.4
8		3.5	13	9.5	2.0	0.7	0.4
9		4.6	15	8.7	2.2	0.7	0.5
10		5.0	17	8.5	2.0	0.5	0.4
11		5.9	18	8.1	2.0	0.5	0.5
12		6.8	20	8.1	2.0	0.5	0.7
13		7.8	19	7.8	1.7	0.5	0.5
14		8.5	18	7.8	2.0	0.4	0.5
15		9.4	16	7.4	2.2	0.4	0.5
16		10	15	7.0	2.0	0.4	0.4
17		11	13	6.5	1.7	0.4	0.4
18		10	12	6.2	1.5	0.4	0.4
19		10	11	5.9	1.3	0.3	0.4
20		9.5	10	5.4	1.0	0.3	0.4
21		8.7	10	5.0	1.0	0.4	0.5
22		8.1	11	4.8	1.3	0.4	0.5
23		7.4	11	4.6	1.5	0.5	0.5
24		6.5	11	4.6	1.5	0.7	0.4
25		5.9	11	4.4	1.3	0.5	0.4
26		5.5	11	4.1	1.3	0.5	0.4
27		4.8	11	3.9	1.0	0.5	0.5
28		4.1	12	3.6	1.0	0.4	0.7
29		4.4	12	3.5	0.9	0.4	0.9
30		4.8	12	3.3	0.9	0.4	0.9
31			12		0.9	0.4	
MEAN		6.1	12.0	7.3	1.8	0.6	0.5
AC-FT		365	740	432	108	34	30

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 47

1994 Daily Mean Discharge
(In cubic feet per second)

EAGLE CREEK NEAR EAGLEVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		3.7[1/]	12	19	4.2	1.3	0.8
2		3.7	13	20	4.0	1.0	0.9
3		4.0	14	21	3.7	0.9	0.9
4		4.0	15	20	3.4	0.9	1.0
5		4.2	16	19	3.2	0.8	1.0
6		4.4	16	19	3.0	0.8	0.9
7		4.6	17	18	2.7	0.9	0.9
8		4.6	18	17	2.5	0.9	0.8
9		4.9	24	17	2.3	1.0	0.8
10		5.3	31	16	2.1	0.9	0.8
11		5.5	28	15	2.0	0.8	0.9
12		5.7	30	14	2.0	0.9	0.9
13		5.9	25	13	2.3	1.0	0.9
14		6.1	23	12	2.1	0.9	0.9
15		8.0	23	11	2.1	0.9	0.9
16		10	22	11	2.0	0.8	0.9
17		13	21	10	1.6	0.8	0.8
18		14	20	9.5	1.5	0.7	0.8
19		16	19	9.0	1.4	0.7	0.8
20		13	18	8.4	1.4	0.8	0.8
21		12	18	8.0	1.4	0.8	0.8
22		12	17	7.5	1.3	0.8	0.9
23		10	16	6.7	1.3	0.8	0.9
24		9.2	16	6.3	1.4	0.8	0.8
25		9.5	16	5.9	1.4	0.8	0.8
26		9.7	15	5.3	1.3	0.7	0.8
27		10	16	4.9	1.1	0.7	0.8
28		11	17	4.4	1.3	0.7	0.9
29		11	18	4.4	1.4	0.7	1.0
30		11	19	4.2	1.4	0.8	1.0
31			19		1.3	0.8	
MEAN		8.2	19.1	11.9	2.1	0.8	0.9
AC-FT		488	1170	708	127	52	52

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 48

1994 Daily Mean Discharge
(In cubic feet per second)

EMERSON CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		4.2[1/]	4.9	7.7	1.8	0.8	1.0
2		4.4	4.6	7.2	1.8	0.8	1.1
3		4.4	4.9	6.7	1.7	0.7	1.2
4		4.6	5.9	6.5	1.7	0.8	1.1
5		4.9	6.5	5.9	1.6	0.9	1.0
6		4.6	7.7	5.9	1.6	0.9	0.9
7		4.9	8.8	5.5	1.6	0.8	1.1
8		4.9	9.8	4.9	1.4	0.9	1.2
9		5.2	12	4.6	1.4	0.8	1.3
10		5.2	11	4.2	1.3	0.8	1.2
11		5.5	11	4.0	1.3	0.8	1.3
12		5.2	11	3.7	1.3	0.8	1.4
13		5.5	10	3.5	1.3	0.9	1.3
14		5.5	9.8	3.2	1.3	0.9	1.3
15		5.6	8.8	3.2	1.3	0.9	1.3
16		6.5	8.4	3.5	1.2	0.9	1.2
17		7.7	8.4	3.2	1.2	1.0	1.3
18		8.4	8.4	3.0	1.2	1.0	1.2
19		9.8	8.1	2.8	1.2	1.0	1.1
20		9.2	8.4	2.6	1.1	1.0	1.2
21		8.4	8.1	2.4	1.0	1.0	1.3
22		8.1	7.7	2.4	1.1	1.1	1.3
23		7.4	7.2	2.2	1.2	1.2	1.2
24		6.7	7.2	2.2	1.2	1.1	1.1
25		6.2	6.9	2.2	1.1	1.1	1.0
26		5.5	7.2	2.1	1.1	1.0	1.2
27		5.2	7.2	2.1	1.0	1.0	1.3
28		4.9	7.2	2.1	1.0	1.1	1.3
29		5.2	6.9	1.9	0.9	1.1	1.4
30		4.9	6.9	1.9	0.9	1.1	1.4
31			6.9		0.9	1.1	
MEAN		6.0	8.0	3.8	1.3	1.0	1.2
AC-FT		355	492	224	79	58	72

[1/] No record before April 1.

SUSAN RIVER WATERMASTER SERVICE AREA

SUSAN RIVER WATERMASTER SERVICE AREA

The Susan River service area is in southern Lassen County near Susanville. The main area of water use is in Honey Lake Valley between Susanville and the northwest shore of Honey Lake, a stretch of about 25 miles. The valley floor is at an elevation of about 4,000 feet. Water comes from three stream systems: Susan River, Baxter Creek, Parker Creek, and their respective tributaries.

The Susan River originates in the Cascade Range just east of Lassen National Park at an elevation of about 7,900 feet. It runs east from Silver Lake through McCoy Flat Reservoir, the town of Susanville, and then to Honey Lake.

The river has four major tributaries: Piute Creek, entering from the north at Susanville; Gold Run and Lassen creeks, entering from the south between Susanville and Johnstonville; and Willow Creek, entering from the north above Standish. Gold Run and Lassen creeks rise on the north slope of Diamond Mountain at an elevation of about 7,600 feet. The watersheds of Piute and Willow creeks are on the south slopes of Round Valley Mountain at lower elevations.

The Susan River divides into three channels a short distance below its confluence with Willow Creek. The channels are Tanner Slough Channel on the north, Old Channel in the middle, and Dill Slough Channel on the south. Hartson Slough and Whitehead Slough divert from Dill Slough on its south bank further downstream.

The Baxter Creek stream system is in Honey Lake Valley on the east side of the Sierra Nevada, about 10 miles southeast of Susanville. The main creeks in the system are Baxter Creek, which rises on the west side of the basin and flows east, and Elysian, Sloss, and Bankhead creeks, tributaries of Baxter Creek from the south.

Parker Creek is also in Honey Lake Valley on the east slope of the Sierra Nevada, about 15 miles southeast of Susanville. It rises on the east side of Diamond Mountain and flows east for about 5 miles into Honey Lake.

Basis of Service

The water of Susan River and its tributaries is distributed according to the water rights defined in Decree No. 4573, Lassen County Superior Court, entered on April 18, 1940. Schedule 3 of the decree defines the rights to the use of water from Willow Creek in Willow Creek Valley, Lower Willow Creek, and the Susan River delta below the Colony Dam. Schedule 4 of the decree defines the rights to the use of water from Gold Run, Piute, Hills, Holtzclaw, and Lassen creeks above their confluence with the Susan River. Schedules 5 and 6 of the decree define the rights to the use of water from the Susan River, exclusive of its tributaries. The decree establishes three priority classes each on Susan River and Gold Run Creek, two on Willow Creek, and one each on Piute and Hills creeks.

The water of Baxter Creek and its tributaries is distributed according to the water rights defined in the statutory adjudication as set forth in Decree No. 8174, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Sloss and Bankhead creeks, and Schedule 4 defines the rights to the use of water from Baxter and Elesian creeks. The Baxter Creek rights are divided into five priority classes.

The water of Parker Creek and its tributaries is distributed according to the water rights defined by a statutory adjudication as set forth in Decree No. 8175, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Parker Creek, with four priority classes.

The Susan River watermaster service area was created by order of the Division of Water Resources on November 10, 1941. The Baxter and Parker creek stream systems were added to the Susan River service area on February 16, 1956.

Water Supply

Water in the Susan River service area comes from two major sources: snowmelt runoff and springs. Snowpack in the Willow Creek Valley and Piute Creek watersheds, which contain more than half the Susan River stream system, melts early in the spring and is usually depleted by May 1. Irrigation requirements from this part of the stream system are then almost entirely dependent on the flow of springs that are relatively constant throughout the year.

Under average flow conditions, Lassen, Gold Run, Baxter, and Parker creeks and the Susan River above Susanville are sustained by snowmelt runoff until early June. The flow from perennial springs in this portion of the system is comparatively small.

Lassen Irrigation Company stores supplemental water in Hog Flat and McCoy Flat reservoirs, on the headwaters of the Susan River. This stored water is released into the Susan River channel and joins the natural flow, usually during June and July. It is then rediverted into Lake Leavitt for further distribution by the irrigation company.

Records of daily mean discharge of the several stream gaging stations in the service area are presented in Tables 49 through 57.

Method of Distribution

A major portion of the irrigation in the Susan River service area is done by flooding. Water is supplied to the area from the Susan River, tributaries to the river, and other minor streams. The distribution of water is provided by a system of diversion dams, canals and ditches. Included in the operation of the service area are three reservoirs owned and operated by the Lassen Irrigation Company which are McCoy Flat Reservoir, Hog Flat Reservoir, and Lake Leavitt.

1994 Distribution

This is the 53nd annual report on watermaster service in the Susan River watermaster service area and covers the period of distribution beginning March 1 and continuing until November 1. Virgil D. Buechler, Water Resources Engineering Associate, was the watermaster.

Streamflow conditions for the 1994 speak for themselves; i.e., Table 49 "Susan River at Susanville" was 26 percent of normal.

Parker Creek

First-priority water rights were served to June and the supply then dried up.

Baxter Creek

Upper Baxter Creek supplied 2 cfs past Diversion No. 7 on March 7, decreasing to 1 cfs March 19. On May 7 total Baxter Creek above Diversion #3 was 1.6 cfs decreasing to 0.3 June 24, and then dried up for the remainder of the season.

Hills Creek

The water supply in Hills Creek only filled Emerson Lake to one-third of its capacity by May 3.

Gold Run Creek

Flows peaked in early April and gradually decreased to its low of 0.05 cfs on August 16.

Piute Creek

The spring-fed water supply was sufficient to satisfy all allotments for a while, but dried up at Weatherlo Street at the city park on June 17.

Susan River

Flow in the Susan River on March 1 was 43 cfs. It peaked at 155 cfs on March 5, decreasing to 4.2 cfs (first priority water) by June 20. The minimum flow of the season was 0.3 cfs on August 14, after which the flow started to gradually increase.

Lassen Irrigation Company Reservoirs

Inflow to McCoy Flat Reservoir started slowly on April 10 and continued through May 22 with a total inflow of 846 acre-feet. Fortunately, there was a good carryover. The releases totaled 5,129 acre-feet from May 1 through June 16. A total of 457 acre-feet was released from Hog Flat Reservoir during the period April 18 through May 26 when it dried up.

Lower Susan River Below the Confluence of Willow Creek

The total flow in the Lower Susan River below Willow Creek exceeded 10 cfs until June 16 and then gradually receded to its low of 3.4 cfs August 28.

The flow to the lower users did not increase to 10 cfs again until October 24. Maintaining stockwater to Dill Slough was a problem throughout the season.

Lassen and Holtzslaw Creek

Lassen Creek had 0.50 cfs March 23 decreasing to 0.20 cfs June 24. All Lassen Creek water stayed in the Tangeman Ditch which is first priority only.

Willow Creek

The flow in Willow Creek above Murrer Diversion was measured at 8 cfs May 1, and remained steady the remainder of the season. The Neuhaus-Jacob ditch had a continuous flow of 2.1 cfs during the period from April 1 to October 31.

The lower Schedule 3 users received their percentage of second-priority water from Willow Creek during the irrigation season.

The flow at "Willow Creek near Susanville" USGS gaging station and "Willow Creek (above Mapes Big Springs) near Susanville" is presented in Tables 52 and 53.

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 49

1994 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER AT SUSANVILLE[1/]

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	43	46	23	100	1.7	0.4	0.8
2	46	46	57	99	1.6	0.5	1.5
3	47	47	82	97	1.5	0.5	0.6
4	51	46	86	94	1.4	0.5	0.6
5	155	42	51	92	1.3	0.5	0.6
6	91	42	50	93	1.1	0.6	0.9
7	64	45	73	60	0.9	0.5	0.5
8	54	42	53	20	1.2	0.6	1.7
9	52	45	52	13	0.8	0.6	0.9
10	58	41	43	42	1.0	0.6	0.4
11	67	36	38	68	1.2	0.7	0.7
12	56	36	36	67	0.9	0.8	0.8
13	52	39	32	64	0.8	0.5	0.9
14	55	41	28	59	0.9	0.3	1.1
15	64	41	28	46	0.8	0.4	0.5
16	67	41	28	18	0.4	0.6	0.6
17	61	45	107	8.7	0.5	0.7	1.7
18	57	49	126	6.4	0.5	0.7	1.5
19	54	58	129	3.2	0.6	0.6	1.1
20	47	66	129	4.2	0.6	0.6	1.5
21	47	63	138	4.4	0.6	0.6	0.6
22	47	60	136	3.4	0.5	0.7	0.9
23	41	56	133	2.2	0.5	0.8	0.5
24	38	52	130	2.3	0.5	1.5	0.5
25	37	52	127	2.6	0.5	0.8	0.8
26	36	52	121	2.7	0.6	0.8	0.8
27	38	48	113	1.9	0.5	0.8	1.5
28	41	35	109	2.0	0.6	0.8	0.8
29	44	23	107	2.1	0.5	0.8	2.0
30	47	22	104	1.8	0.6	0.8	1.2
31	49		102		0.5	0.8	
MEAN	55	45.2	82.9	36.0	0.8	0.6	1.0
AC-FT	3380	2690	5100	2140	51	40	57

1/ USGS Station

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 50

1994 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER ABOVE CONFLUENCE OF WILLOW CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	4.6	13	8.2	5.1	0.8		
2	8.8	8.2	5.1	4.6	0.8		
3	19	6.7	4.6	4.1	0.8		
4	25	6.7	9.2	3.7	0.8		
5	37	6.5	18	3.2	0.8		
6	11	5.9	11	2.8	0.8		
7	7.9	5.4	46	2.8	0.7		0.1[1/]
8	25	5.4	34	2.6	0.5		0.1
9	24	5.1	19	2.4	0.4		0.1
10	24	5.4	18	1.7	0.3		0.1
11	29	5.9	15	1.7	0.3		0.1
12	22	6.5	13	1.5	0.4		0.1
13	18	5.9	11	1.1	0.4		0.1
14	15	5.9	9.8	1.1	0.4		0.1
15	29	5.1	9.2	1.1	0.4		0.1
16	29	4.6	8.8	1.1	0.5		0.1
17	16	5.6	9.2	1.1	0.5		0.1
18	24	5.1	7.6	1.1	0.5		0.1
19	26	4.6	12	1.1	0.5		0.1
20	20	4.1	12	0.9	0.4		0.1
21	4.2	3.7	12	0.9	0.4		0.1
22	19	4.1	13	0.9	0.3		0.1
23	20	9.8	15	0.9	0.2		0.1
24	16	7.9	14	0.9	0.1		0.1
25	10	6.7	12	0.9	0.1		0.1
26	13	8.2	14	0.9	0.1		0.2
27	8.8	8.5	11	0.9	0.1		0.2
28	13	8.8	9.2	0.9	0.1[1/]		0.2
29	14	8.8	9.2	0.9		0.1[1/]	0.3
30	13	8.2	9.8	0.9		0.1	0.3
31	7.3		8.2			0.0[1/]	
MEAN	17.8	6.5	13.2	1.8	0.4		0.1
AC-FT	1096	389	809	107	25		6

[1/] No flow from July 29 through August 28, and August 31 through September 6.

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 51

1994 Daily Mean Discharge
(In cubic feet per second)

GOLD RUN CREEK NEAR SUSANVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	1/	6.0					0.50
2							
3							
4							
5						0.20	
6							
7							
8							
9							
10							
11							
12					0.60		
13							
14							
15							
16						0.05	
17							
18							
19							
20							1.0
21							
22							
23							
24							
25			4.5				
26							
27							
28		8.0					
29							
30							
31							
MEAN							
AC-FT							

1/ No record, instantaneous measurements only.

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 52

1994 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK NEAR SUSANVILLE[1/]

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	41	14	19	11	5.3E	3.1E	1.9E
2	37	14	18	10	5.2E	3.0E	1.8E
3	34	15	16	9.9	5.1E	2.9E	1.8E
4	33	16	15	9.5	5.1E	2.9E	1.8E
5	45	16	14	9.1	5.1E	2.8E	1.8E
6	42	17	19	9.0	5.0E	2.8E	1.8E
7	37	19	34	8.9	5.0E	2.7E	1.7E
8	34	20	42	8.9	4.9E	2.7E	1.8
9	34	20	45	8.7	4.8E	2.7E	1.8
10	32	19	38	8.4	4.7E	2.6E	1.9
11	34	19	31	8.2	4.5E	2.6E	2.0
12	32	18	25	8.1	4.5E	2.5E	2.2
13	30	18	21	8.1	4.4E	2.5E	2.4
14	29	16	19	8.1	4.4E	2.5E	2.2
15	28	14	16	8.1	4.3E	2.4E	2.2
16	28	12	15	7.8	4.3E	2.4E	2.3
17	27	12	15	7.6	4.3E	2.3E	2.2
18	25	14	16	7.4	4.2E	2.3E	2.1
19	25	14	18	7.3	4.2E	2.3E	2.0
20	25	14	20	7.3	4.1E	2.3E	1.9
21	24	14	20	7.0E	4.0E	2.2E	1.8
22	25	15	18	6.8E	3.8E	2.2E	1.8
23	24	17	16	6.6E	3.8E	2.2E	1.8
24	21	17	15	6.5E	3.7E	2.2E	1.8
25	20	16	14	6.3E	3.6E	2.1E	1.8
26	18	15	12	6.1E	3.5E	2.1E	2.2
27	14	15	11	5.9E	3.4E	2.1E	2.6
28	16	15	11	5.7E	3.3E	2.0E	2.3
29	17	18	11	5.6E	3.3E	2.0E	2.6
30	14	20	11	5.4E	3.2E	1.9E	2.8
31	14		11		3.2E	1.9E	
MEAN	27.7	16.1	19.5	7.8E	4.2E	2.4E	2.0E
AC-FT	1700	958	1200	463 E	262 E	149 E	121 E

[1/] USGS Station.
E - Estimated

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 53

1994 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK (ABOVE MAPES BIG SPRINGS) NEAR SUSANVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		7.7	14	11	1.0		
2		8.2	13	10	0.4		
3	24[1/]	9.4	12	7.5	0.2		
4	23	10	11	7.3	0.2[2/]		
5	29	11	9.8	6.2			
6	30	12	15	5.8			0.2[2/]
7	28	13	26	6.0			0.5
8	26	15	34	6.0			1.0
9	25	15	35	5.2			1.0[2/]
10	25	13	27	5.0			
11	25	13	22	4.7			
12	24	13	20	4.5			
13	23	12	18	4.3			
14	23	9.6	16	4.1			
15	22	7.3	14	3.9			
16	21	5.6	13	3.6			
17	21	5.4	13	3.3			
18	19	7.1	15	2.6			
19	19	7.7	17	2.2			
20	19	7.5	18	2.1			
21	19	7.5	18	2.1			
22	19	9.1	16	2.1			
23	18	10	14	1.8			
24	15	11	13	1.8			
25	15	10	11	1.8			
26	12	8.9	11	1.5			
27	8.9	8.9	10	1.5			
28	10	9.6	9.8	1.5			
29	11	13	10	1.5			
30	8.4	15	10	1.5			
31	8.2		10				
MEAN		10.2	16.0	4.1	0.1		0.1
AC-FT		606	983	243	4		5

[1/] No record before March 3.
[2/] No flow July 5 through September 5, and September 9 through September 30.

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 54

1994 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK AT THE CONFLUENCE OF THE SUSAN RIVER

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	43	18	18	10	7.0	3.0	3.7
2	43	17	18	19	6.2	2.8	3.7
3	42	17	17	13	5.1	2.8	3.7
4	41	17	16	14	5.1	4.1	3.7
5	44	17	16	15	5.1	4.6	3.7
6	55	17	18	12	4.9	4.9	3.7
7	55	17	26	10	4.9	4.9	3.9
8	55	18	70	11	4.9	4.9	4.1
9	43	19	58	11	4.9	4.9	4.1
10	40	18	43	10	4.9	4.9	4.1
11	42	18	35	10	4.6	4.9	4.4
12	40	19	29	10	5.6	4.9	4.4
13	38	19	24	10	6.2	4.9	4.4
14	37	19	19	10	6.7	4.9	4.6
15	37	17	19	10	6.7	4.9	4.6
16	36	10	17	10	6.7	4.6	4.9
17	35	12	18	9.8	6.2	4.6	4.9
18	34	12	18	9.8	6.2	4.6	5.1
19	33	12	18	9.8	6.2	4.6	5.1
20	33	19	18	9.5	6.2	4.4	5.1
21	32	12	20	9.5	6.2	4.1	5.1
22	32	13	19	9.5	5.9	4.1	4.9
23	31	15	18	8.8	5.9	4.1	4.9
24	30	18	16	8.8	5.6	3.9	4.9
25	27	20	14	8.8	4.6	3.9	4.9
26	27	16	12	7.3	3.4	3.9	4.6
27	22	16	13	7.3	3.4	3.7	4.6
28	21	15	11	7.0	3.2	3.4	4.6
29	21	16	10	7.3	3.2	3.4	4.6
30	21	18	11	7.9	3.0	3.4	4.6
31	20		11		3.0	3.4	
MEAN	35.8	16.4	21.6	10.2	5.2	4.2	4.5
AC-FT	2202	974	1329	607	321	259	265

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 55

1994 Daily Mean Discharge
(In cubic feet per second)

DILL SLOUGH NEAR STANDISH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	14	7.9	8.2	6.4	2.5	0.2	0.4
2	15	7.9	8.2	5.5	2.9	0.2	0.4
3	16	7.7	7.4	4.8	3.5	0.2	0.4
4	17	7.7	6.2	4.8	3.3	0.2	0.4
5	17	7.9	7.4	4.6	3.3	0.2	0.4
6	23	7.9	7.4	3.9	3.3	0.3	0.4
7	21	8.2	12	3.9	2.9	0.4	0.4
8	17	8.5	12	3.9	2.9	0.4	0.4
9	19	8.8	12	3.7	2.5	1.7	0.5
10	19	8.8	12	3.7	2.4	1.7	0.5
11	20	9.3	12	3.7	2.4	1.7	2.0
12	19	9.9	12	3.7	2.4	1.7	2.0
13	18	9.9	9.3	3.7	2.4	1.7	2.0
14	14	9.3	7.9	3.7	2.4	1.7	2.0
15	16	8.5	7.2	3.7	2.4	1.7	2.0
16	16	7.7	8.2	3.7	2.4	1.7	1.7
17	13	7.4	8.2	3.7	2.4	1.7	1.7
18	12	7.2	8.2	3.7	1.5	0.8	1.7
19	11	7.2	8.2	3.7	0.8	1.5	1.7
20	11	7.2	8.5	3.7	0.5	1.5	1.7
21	11	7.2	8.5	2.5	0.5	1.5	1.9
22	11	7.2	8.2	2.5	0.5	1.5	1.9
23	14	8.5	8.2	2.5	0.5	1.5	1.9
24	13	7.9	8.2	2.5	0.5	1.1	1.9
25	12	8.5	8.2	2.5	0.7	0.8	2.0
26	12	9.3	8.2	2.5	0.5	0.6	2.0
27	11	9.0	7.4	2.5	0.3	0.4	2.0
28	10	8.5	7.4	2.5	0.2	0.4	2.0
29	11	7.9	7.4	2.5	0.1	0.4	2.0
30	9.3	7.9	7.4	2.5	0.1	0.4	2.0
31	7.9		6.4		0.3	0.4	
MEAN	14.5	8.2	8.6	3.6	1.7	1.0	1.4
AC-FT	893	490	532	213	106	60	84

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 56

1994 Daily Mean Discharge
(In cubic feet per second)

OPERATION OF MCCOY AND HOG FLAT RESERVOIRS

	McCoy Flat Reservoir Inflow from Susan River		McCoy Flat Reservoir Release to Susan River		Hog Flat Reservoir Releases to Susan River	
DAY	APRIL	MAY	MAY	JUNE	APRIL	MAY
1		2.8	9.9[2]	82		17
2		2.2	33	81		14
3		3.0	39	80		12
4		3.4	15	77		0.1[3]
5		5.9	1.4	76		
6		16	1.4	71		
7		43	1.4	54		
8		39	1.4	1.0		
9		30	1.4	27		
10		22	1.4	56		
11		15	1.4	54		
12		10	1.4	54		
13		6.7	1.4	51		
14	13[1]	4.1	1.4	38		
15	17	2.6	1.4	1.6		
16	13	4.6	98	0.5[2]		
17	8.8	10	97			
18	13	5.9	97		12[3]	
19	16	4.6	96		20	
20	18	3.7	91		17	
21	16	1.5	90		18	
22	14	1.1[1]	90		18	
23	12		90		18	8.5[3]
24	10		90		16	7.0
25	10		90		16	5.6
26	10		88		16	0.3[3]
27	9.8		87		15	
28	4.6		85		0.1[3]	
29	2.4		85			
30	2.0		83			
31			82			
MEAN			50.0			
AC-FT			3077			

[1] No record before April 14, and no flow after May 22.
[2] No releases before May 1 or after June 16.
[3] No releases before April 18, April 29 and 30, and from May 5 through May 22, or after May 26.

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 57

1994 Daily Mean Discharge
(In cubic feet per second)

A AND B CANAL ABOVE LAKE LEAVITT

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	39			69			
2	35			70			
3	32			71			
4	28			66			
5	108		0.8[1/]	66			
6	98		0.8	69			
7	63		12	58			
8	40		10	55			
9	35		14	0.3			
10	20		12	0.1			
11	28		5.9	7.6			
12	32		0.1	18			
13	29		0.1	20			
14	33		0.1	21			
15	32		0.8	19			
16	35		1.5	11			
17	31		15	9.8			
18	24		85	3.4[1/]			
19	17		72				
20	16		72				
21	10		78				
22	4.6		73				
23	2.4[1/]		79				
24			76				
25			78				
26			71				
27			73				
28			70				
29			70				
30			68				
31			70				
MEAN							
AC-FT							

[1/] No flow from March 24 through May 4, and after June 18.